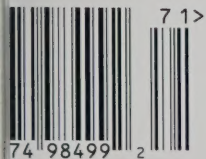


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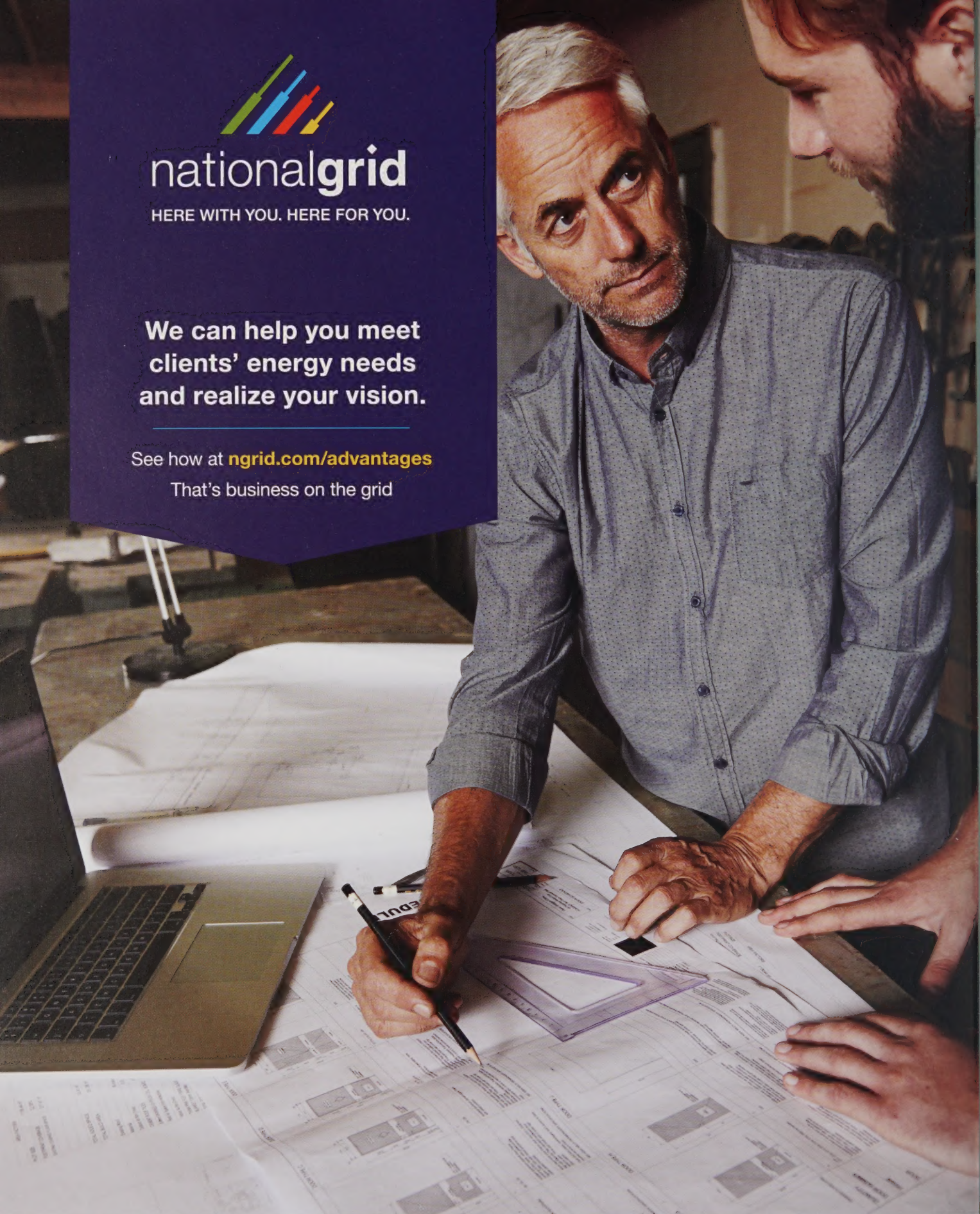
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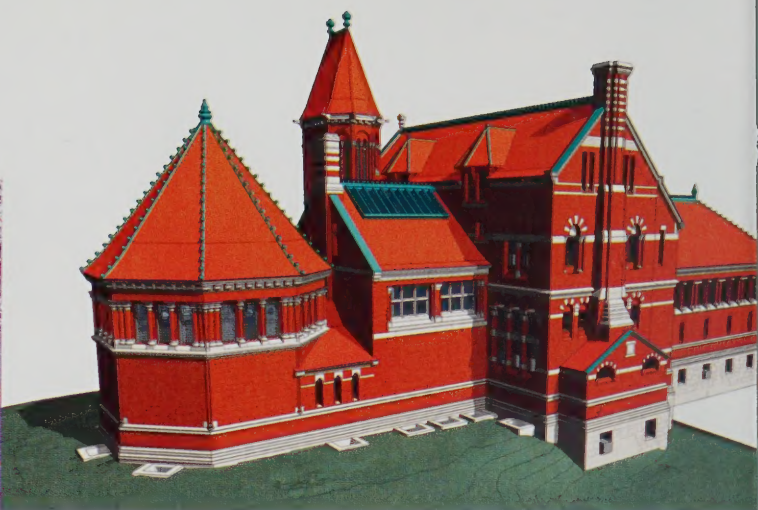
Hypo Noir Petri Installation, Klari Reis, 2014. 150 petri dish paintings, 60" round. Reis is a San Francisco-based painter.

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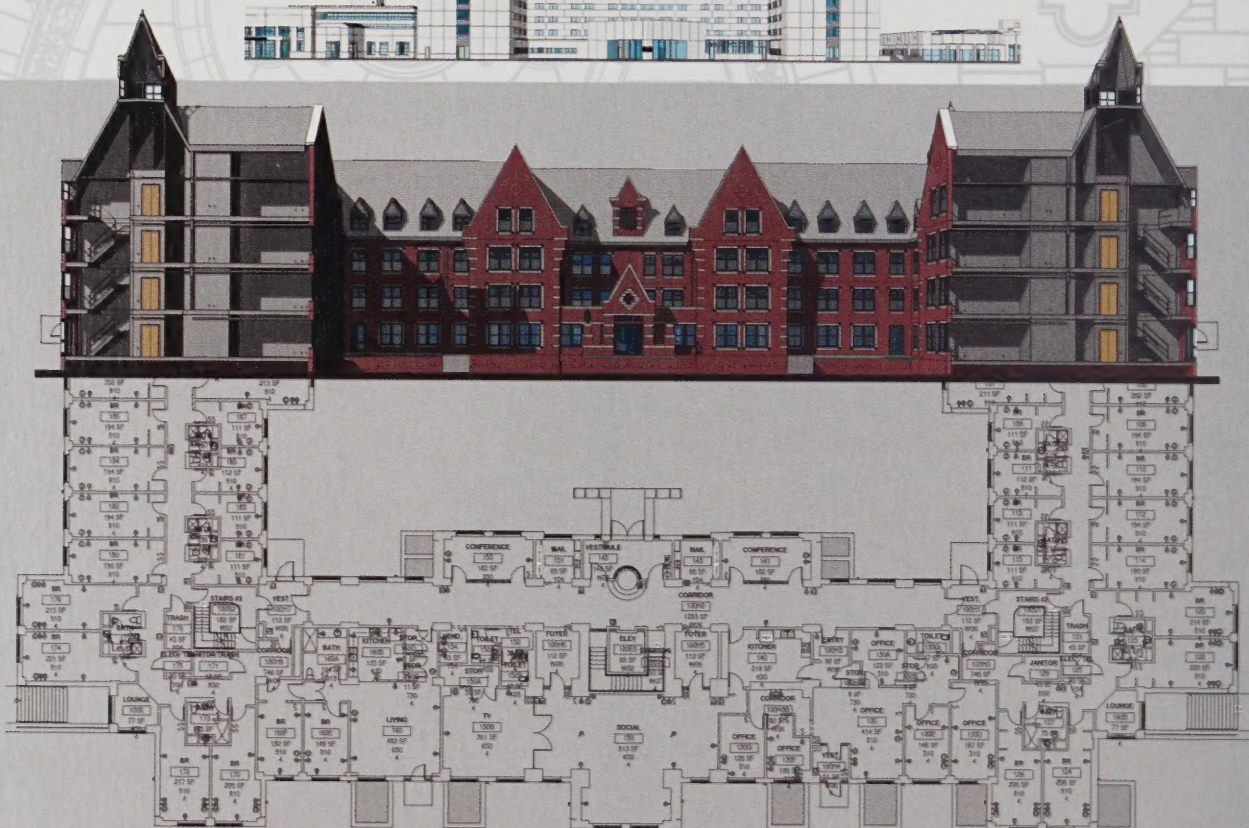
Star, Jun Ong, 2015. An installation built from steel cables and LED light in the Butterworth suburb of mainland Penang, Malaysia, curated by the art center Hin Bus Depot for the street art festival Urban Xchange. Photo: Ronaldas Buozis/Studio Vieta



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SPRING AHEAD

Let's face it. The things many in the design community care about—equity, diversity, sustainability, expertise—are endangered by a new administration in Washington that is hostile to all of those values. The comfortable, rational order has been upended: programs threatened, critics silenced, frankly unqualified neophytes installed in critical agencies; I needn't go on.

Rather than wallow in the winter of our discontent, this issue of *ArchitectureBoston* imagines a Design Spring. Architects are natural-born problem solvers, and in the current era, those skills will be called upon as never before. This is exactly the time to promote social betterment through design: to renew commitments to affordable housing, to public and civic spaces, to sustainable landscapes and structures. "Design brings form to ideas," writes Cooper Hewitt curator Cynthia E. Smith in the lead article, "Tonics and Provocations" (page 20). "Right now it is more critical than ever that what we value as a society is expressed in what we create."

The articles in this issue celebrate moments of discovery, innovation, and progress across centuries. They are an inspiration and a model, even as official Washington threatens progress on a host of issues, from climate change to public education. Nothing is achieved by paralysis and despair. John Peterson, curator of the Loeb fellowship at Harvard's Graduate School of Design, echoed this sentiment just after the election when he said it is possible, even amid sadness and anxiety, "to find solace in doing."

This magazine is full of things that can be done: Designers can work locally in their own communities

to reclaim abandoned properties, make rain gardens or parklets, build housing for refugees or homeless families, be more strategic with pro bono work, experiment on a small scale. They can work to dignify a public realm that has long been demeaned: creating uplifted civic and cultural spaces that bring society together across divides.

Designers can double down on solutions to climate change. It may be harder to achieve the carbon-neutral goals of the profession's 2030 Challenge without the prod of government regulations, but architects hardly know their own power when it comes to moving the needle on sustainability. On page 30, Russell Perry FAIA shows the influence the design community already is having on the development of safe alternatives to hazardous building materials; the same can be said for energy systems and resilient landscapes.

Architecture's focus on evidence-based design is a bulwark against another troubling trend—the disdain for verifiable facts. The popular culture today devalues professional expertise as "elitist," yet independent, accountable research is a hallmark of excellent design, and its importance goes far beyond the construction of healthcare facilities, where the principle has its roots.

An action need not be explicitly focused on public policy to have a public impact. In an interview, Peterson described the power of choice: "It requires a little ambitious thinking, but every project can have an implied social agenda," he said. Even designing a fancy new kitchen can be done mindfully by eschewing toxic materials, using natural light, and thinking hard about the cultural meaning of the kitchen as the locus of connection, nourishment, and care.

Among the many protest signs at the women's march in January was one with a particularly inspiring message. "Trying times are times for trying," it read. These times call upon the talents of architects to think not just outside boxes but around corners: to imagine, sketch, and then build the society we want to see. This is the joy of creation. No power can overcome it. ■

Renée Loth
Editor



Photo: Ben Gebro



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ON “DOMICILE” (WINTER 2016)

It was a walk down memory lane reading the article by Michael Pyatok FAIA (“Unpacking the problem”). I shared much of this struggle of finding ways to fit 100 pounds of affordable housing programs in a 50-pound bag, initially working as a licensed architect and later at MassHousing (a quasi-public affordable housing finance agency from which I have only recently retired after a 30-year career). I concur with his observations about the economic intractability of providing sufficient housing, and I’m alarmed that the majority party seems hell-bent on undoing any safety net promulgated by FDR’s New Deal through Obama’s Affordable Care Act.

As we whittle away at public education and healthcare, it is a pipe dream to think that the federal government will advance a consistent commitment to safe and sanitary housing as a right. I am profoundly worried about how we will address the housing demand of seniors with no source of income, of the physically and mentally disabled, of the unemployed and unemployable. How can we be optimistic given the size of the problem? I remember a New York City housing advocate who counseled in the 1970s, in a comparably drastic economy, that we should be advocating for everything because there is no possibility of getting anything. “If it isn’t impossible,” he said, “don’t try to do it.”

I remember when, in dire circumstances, deals have been struck between strange bedfellows, where adversaries became partners: We’ve seen the federal government directly finance construction that was federally managed; substitution of construction dollars for voucher programs that promoted leasing of privately owned housing; federal block grant program funds used by local community development corporations to sponsor mission-driven initiatives; and, lately, corporations and high-net-worth individuals investing in the production of some of the most beautiful and green housing developments

using the low-income-housing tax-credit program.

There is always a way to innovate, and we should look to the future and imagine how this can be done. If there is a disruptive technology that can be introduced to smash the incredibly high costs of construction in markets like Boston, we should experiment with it. Our attitude toward struggle is what will make the difference.

I know how hard it is to get something designed and built to reflect the shared values of diverse groups of residents and stakeholders. Pyatok’s projects are evidence of how a particularly skilled architect and his process uniquely engages the community of users, producing developments that celebrate the people who live there. Don’t you wish you could, too?

DIANE GEORGOPULOS FAIA
Cambridge, Massachusetts

Being a kid nurtured by the 1960s, I am sympathetic to Michael Pyatok’s analysis of the housing struggles in our country. However, with a Red State Congress chomping at the bit to slash domestic spending, I fear things will soon get worse.

I hope it is not heresy to say that architecture cannot nearly solve our housing problems. Perhaps we can agree that when coupled with activism and purpose, the profession gets results. After all, Pyatok’s story line and career choice were essentially about activism: Mission-driven organizing for and with the communities gave cause to the beautiful forms he created. Therein lies solutions—architecture and involvement (with no small dose of money) can be synergistic partners. Pyatok’s striking constructions help rational people wash away disparaging stereotypes and lead the way to more funding.

This new era will test us all. Funds may shrink, but principles like Pyatok’s



coupled with the determination, tenacity, and imagination of people in neighborhoods and communities will continue to motivate and inspire architecture and politics—and funding—for the challenging times ahead.

PHILIP GIFFEE
Executive director, Neighborhood of Affordable Housing
East Boston

“Domicile” presented a layered array of ideas related to housing that goes beyond simply constructing 53,000 new units by 2030. Fine-grained ideas (in the “Getting to yes” essays) like subdividing existing buildings, embracing the flexibility of accessory dwelling units, or better connecting to Gateway Cities will surely contribute to a comprehensive system of housing for the region—but for those without homes, simply providing more affordable housing options might not be enough. This discussion failed to specifically address that oft-forgotten population: the homeless.

In “Welcome, home,” Jamila Bradley beautifully describes how some of us, faced with adversity, must build a home within ourselves. No population represents this concept as clearly as the homeless; lacking a physical home, they must carry their homes with them. Their “homes” must be mobile, mentally fortified, adaptable—and a source of hope in spite of jarring circumstances.

I think about this population often. Surprisingly, 60 percent of the homeless in the Boston area are families with at least one child; less than 15 percent suffer

from severe mental illness or a substance abuse problem. What we can't forget is that 100 percent are members of our community, carrying their homes into the places we create. How can we, as design professionals, support them?

Even as we turn to more robust large-scale solutions to solve these problems of housing, let's remember the voiceless stakeholders who occupy the spaces we create whether we intend them to or not. For those who carry their homes with them, let's make the buildings we design more welcoming, make our public spaces more kind, make our landscapes more serene. Let's not forget to design for this population, too.

GRETCHEN KEILLOR

*Planner and design strategist, Sasaki Associates
Watertown, Massachusetts*

I read with interest both "Getting to yes" and "Unpacking the problem." In 1988, the BSA Housing Committee, chaired by Lee Cott FAIA, sponsored a book I proposed, titled *The Affordable Housing Challenge*. Supported by a grant from the Department of Housing and Community Development, the book identified a range of urban infill housing models, selected by the committee for their good design to encourage successful models, save cost, and pass on lessons learned. The 16 case studies—with floor plans, costs, and commentaries—included the Bricklayers Union townhouses at the Back of the [Mission] Hill as well as examples of stick-built, panelized, and modular construction.

The book provided a springboard for me. I became a nonprofit developer with the Women's Institute for Housing and Economic Development for 24 years, where I developed about 15 affordable housing projects, including in Boston, Newton, New Bedford, and Lawrence. It was a challenging career, but an exhilarating, rewarding one. Affordable housing development, expensive and at times mind-numbingly complex, is crucial in preserving and mending mixed-income neighborhoods.

ANNE GELBSPAN

Jamaica Plain, Massachusetts

Thank you for sharing an honest yet optimistic view on the Boston housing market. While the challenges are great, so, too, are the opportunities.

Whether we embrace the promise of Accessory Dwelling Units, as Matthew Littell AIA suggests, realize the potential of underused public lands as Tamara Roy AIA suggests, or convert large existing units that Daniel Bluestone points out into many smaller units, there is no single solution to our housing shortage. The beauty of this is that there is something for everyone. Housing does not, and should not, fall in the "one size fits all" category. Every household is unique. Every home should be, too.

Last fall, our temporary, public exhibition on the Greenway daylighted five thought-provoking ideas for sustainable and affordable housing in Boston. By sharing even just this handful of ideas, we found that the city and its people were genuinely excited about new approaches to urban housing and design. Complete with comment cards and community discussions, Housing the Hub offered visitors the opportunity to learn about and provide feedback on ways we can build both character and capacity. Not surprisingly, different visitors felt that different design ideas were right for them, their families, and their neighborhoods. Some were comfortable with strategically adding height and density; others liked the idea of exploring smaller units, new construction methodologies, or nontraditional building sites.

We will have to do it all—in the right places and in the right ways. We can start by taking the great conversations started in "Domicile" and through the BSA's other programs and publications, and initiatives such as Housing the Hub, out into every corner of our city.

By listening, talking, and working together, we can all be a part of what John McAslan describes as the "basket of solutions."

DAVID NAGAHIRO AIA

*Principal, CBT
Boston*

EDITOR

Renée Loth · rloth@architects.org

DEPUTY EDITOR

Fiona Luis · fluis@architects.org

CONTRIBUTING PHOTOGRAPHERS

Steve Rosenthal, Peter Vanderwarker

CONTRIBUTING EDITORS

Matthew Bronski PE, Matthew Kiefer,
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IN THIS ISSUE



Photo: © Smithsonian Institution

Cynthia E. Smith ("Tonics and provocations," page 20) serves as the Cooper Hewitt, Smithsonian Design Museum's curator of socially responsible design. After training as an industrial designer, she joined Cooper Hewitt in 2005, where she integrates her work experience with her advocacy on human rights and social justice issues.



Photo: Courtesy of the BSA

Justin Crane AIA ("Toward an ideal," page 26) is an associate at Cambridge Seven Associates. He is a founding co-chair of Common Boston, president of Learning By Design in Massachusetts, and a member of the BSA Foundation's Public Programs committee.



Photo: Courtesy of the BSA

Carl Solander AIA ("When walls get in the way," page 27) is the founding principal of Reverse Architecture, a full-service architecture and design practice specializing in contemporary sustainable design. He is a Certified Passive House Consultant.



Photo: Glenn Clevenger/livheart.net

Rose Florian and Kordae Henry ("Open a new window," page 29). Florian, an architecture and urban design student, and Henry, a design associate at MASS Design Group, are the creative directors of the digital catalog *Just Not The Same*.



Photo: Courtesy of SmithGroupJJR

Russell Perry FAIA ("We can move markets," page 30) was from 2005 to 2016 director of Sustainable Design for SmithGroupJJR, an architecture, engineering, and planning firm with offices in nine US cities and Shanghai.



Photo: Courtesy of the BSA

Coco Raynes ("What the heart sees," page 32) is president of Coco Raynes Associates, a multidisciplinary design firm with a background in environmental graphics, industrial design, universal design, wayfinding, place-making, branding, visual identity, and exhibit design.



Photo: Julianne Schaar

Matthew Urbanski ASLA ("A plan takes root," page 34) is principal of Michael Van Valkenburgh Associates, the landscape architecture firm whose projects include Monk's Garden at the Isabella Stewart Gardner Museum, the restoration of Harvard Yard, and Brooklyn Bridge Park.



Photo: Boston's 50 on Fire

Deborah Fennick AIA ("Home for good," page 37) is design principal of Fennick McCredie Architecture. A resident of Somerville, she is chair of the city's Design Review Committee and a member of the Zoning Advisory Committee.



Photo: Courtesy of the BSA

Sam Batchelor AIA ("A measure of impact," page 38), a partner at designLAB architects, founded and directs the MassArt Community/Build Studio and is a board member and former president of the Community Design Resource Center of Boston.



Photo: Gigi de Mánio

Kaki Martin ASLA ("Time to heal," page 39), a founding principal at Klopfer Martin Design Group, is an adjunct faculty member at the Rhode Island School of Design, where she is a member of Health+, a multidisciplinary faculty group engaged in healthcare.

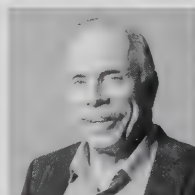


Photo: Courtesy of Stantec

David Dixon FAIA ("The road ahead," page 41) heads the Urban Places Group at Stantec, an interdisciplinary planning and urban design practice with offices in the US and Canada. He is coauthor of *Urban Design for an Urban Century* (Wiley, 2014).



Photo: 128 Business Council

Monica G. Tibbits-Nutt ("A road to somewhere," page 56) is a transportation planner and executive director of the 128 Business Council. She serves on the Massachusetts Department of Transportation board and is a member of the Fiscal Management Control Board that oversees the MBTA.

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UNSTRUCTURED

Opinions and Observations



GENIUS LOCI

Mass Ave: A love affair

It started with a general loss of orientation. Not an unusual occurrence, but as a transplant from the Midwest in the 1970s, I was completely perplexed navigating Boston. Raised a child of the great suburban grid and five-digit house addresses, I was bewildered by the number of streets that didn't continue more than a few blocks and, if they did, couldn't seem to keep the same name. Stories of Boston's wandering cow paths seemed to satisfy locals, but we had cows galore back home, with none of the resultant street chaos.

Then, suddenly, Massachusetts Avenue found me. I started work at Cambridge Seven Associates, where our loft studio space overlooked the street, just outside Harvard Square. Although the title "Avenue" seemed pretentious to me, I soon learned to call it by its less formal diminutive "Mass Ave," and a friendship grew. That first summer in Cambridge, my wife, Elaine, and I were shanghaied into the crew putting on the Second Annual Cambridge River Festival. We were picked up at 4:00 in the morning one Saturday in our partner Paul Dietrich's old Volkswagen van, filled with tanks of helium. Over the next few hours, we attached 1,000 bright red balloons to every post and pole we could reach along Mass Ave, from one end of Cambridge to the other. We met dawn touching nearly every inch from Arlington to Boston.

My first job at C7A was the MBTA Red Line Extension from

Harvard to Alewife. I was a project architect for the Porter Square subway station and got to know Mass Ave literally from the underside. The T excavated Mass Ave to renovate the shallow buried station in Harvard Square, and then a little north of the Cambridge Commons the tracks turn to tunnels and begin the rapid dive to Porter Square. There, the deepest station in the system is 11 stories below grade, below the same bedrock that supports Mass Ave.

Since then we've continued to engage our avenue. During the blizzard of 1978, we had staff skiing down Mass Ave to the Pru to rescue artifacts from our "Where's Boston?" visitor center. In 1980 we created a rainbow of balloons across Mass Ave, from Putnam to Trowbridge, for the 350th anniversary of Cambridge's founding.

Eventually, I found my way outside Cambridge and began to understand how Mass Ave ties together so many communities and interests. It moves from historic town centers to vibrant squares as it links Lexington and Arlington; Porter, Harvard, and Central squares; and then heads into Boston. It crosses Back Bay, somewhat rudely cutting off the alphabetical orderliness (ending it after Hereford Street), and cruises on. It connects cultural institutions, the Church of Christ Scientist headquarters, the Boston Symphony, Boston Medical Center. You can take a college-visit trip from Harvard to Lesley to MIT to the Boston Architectural College to Berklee and

to Northeastern in a single bus ride—and what could be more appropriate—it's the No. 1 bus that travels Mass Ave!

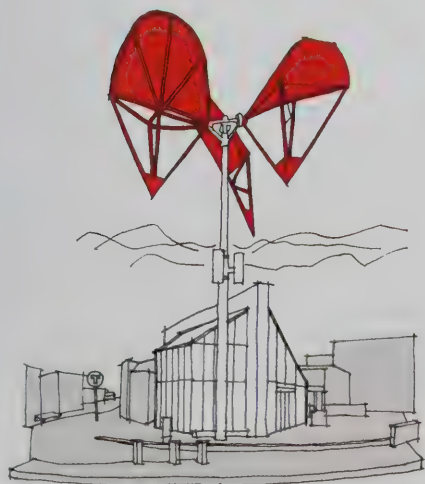
The street seems to have a modest birth in Dorchester at Edward Everett Square and appears from mixed parentage, with Boston Street, East Cottage Street, and Norfolk Avenue crossing Columbia Road and somehow becoming Mass Ave. Today my landmark for the origin is Laura Baring-Gould's sculpture *Clapp Pear*. Then Mass Ave makes it more than 20 miles to the northwest, where the anchor at the other end is the Minuteman National Historic Park. The street has its place in history: In April 1775, Paul Revere and William Dawes Jr. both used parts of the future Mass Ave (then known as the "Great Road") for the ride to Lexington to warn of the approaching British march.

Today we live in Cambridge, just off Mass Ave. When our eldest son was living here, the road connected us with his family in Dorchester, and now it links us to our younger son in the South End. I've been looking over it from C7A for nearly 40 years of hustle and bustle, fire trucks and ambulances, subways and buses, and plenty of people. It is, indeed, a "Great Road."

PETER KUTTNER FAIA, a principal at Cambridge Seven Associates, is the bursar of the AIA College of Fellows.

IMAGES

Public art in Everett Square (*Clapp Pear*, Laura Baring-Gould, 2007) and Porter Square (*Gift of the Wind*, Susumu Shingu, 1985). Sketches: Peter Kuttner FAIA



Landscape Abstracted

Museum of Fine Arts, Boston
Through July 30, 2017

Reflection and transparency are repeating themes throughout this exhibition.

The artists featured here expand the definition of landscape by highlighting the experiential features of the natural world as it is filtered through and reflected against an architectural geometry. To complement acquisitions from its collection, the museum commissioned several site-specific pieces for the show. Anne Lindber's *pivot green blue* and Jason Middlebrook's colossal mural, *Tread Lightly*, respond directly to the airy, voluminous space of the museum's West Wing, designed by I.M. Pei. Lindber's delicately hued strings stretched between walls hover just below the skylights like atmospheric mist, while Middlebrook's bold lines accentuate the grand scale of the corridor.

Many artists use transparent materials to suggest the ephemeral qualities of landscape. Nicole Chesney paints layers of lavender, blue, and gray on mirrored glass, while Sarah Braman creates a human-scaled container with purple tinted glass. Justen Ladda, Teresita Fernández, and Spencer Finch conspicuously employ light, pigment, and mirrors to express the transient shifts of environmental elements.

The one landscape painting—David Hockney's *Garrowby Hill* from 1998—acts as a historic cornerstone to the show. Although it has been widely reproduced, the thick impasto surface can be experienced only in person. A vibrant and bold depiction of Californian topography, it's also now covered in glass, giving it yet another layer of surface appearance—one that is glossy, slick, protective, and reflective. As a painter, I can't help but notice these surficial qualities. I also notice that, at a certain angle, Middlebrook's mural is inadvertently superimposed on Hockney's painting, offering a fresh look at the two works as they overlap. Both concerned with the color, spatial geometry, and perspective of California's landscape, these two painted images seem to collapse time and space into one transparent and reflective point of view—like looking out a window at a landscape as it simultaneously reflects the architectural interior of the space we inhabit.

SANDY LITCHFIELD ASSOC. AIA is an assistant professor in the architecture department at the University of Massachusetts Amherst.

ABOVE

David Hockney's *Garrowby Hill* (1998), left, and Jason Middlebrook's mural *Tread Lightly* (2014), right.
Photos: Sandy Litchfield ASSOC. AIA



Thomas Schütte: *Crystal*

The Clark Art Institute, Williamstown, Massachusetts
Through October 9, 2017

The name of this installation is an immediate explanation of its form and a clear reference to the crystalline nature of quartz found in abundance on the site. A shelterlike destination among the paths of the gently rolling Berkshire Hills, *Crystal* comes into view after crossing a cow pasture. Approaching from below, it appears like the gabled end of a chapel. This dramatic point of view is also the least provocative in its referencing of traditional architectural language. Although the asymmetry of the sculpture is somewhat unusual, the viewer feels within the realm of the familiar.

Circling around this interesting object seems to make it shift, like a graceful animal, from one gestural stance into another. It poses on the edge of the wood. It perches along a short stone wall. It mimics a massive boulder that has been

pushed forward by geological forces.

Architectural language is rooted in the geometry of perception/projection and has the power to define a place (and a role) for the observer. Where do any two facets intersect? Typically, that point would be about 10 to 20 feet away, and from that point of view, *Crystal* appears both in its truest form and also as painfully incomplete. Unlike the rocks scattered in the woods and fields around the sculpture, this object is a vessel, an empty shell. Inside, the structure is treated with pine planks, the facets of which form a dynamic frame for the surrounding landscape in one single aperture. Perception is torqued, shaped by the interior walls. This unpredictable volume inscribes the planes of reference from within itself into the surrounding landscape,



transforming the perception of the observer and imbuing it with a sense of instability. *Crystal*'s subtle angst permeates our reality, throwing into question the stability of the natural and manmade structures that surround us.

In winter, the landscape envelops and complements *Crystal*, allowing its metallic gray skin to blend with the rocks below, the dark tree trunks behind, and the bare hills and muted sky beyond. On a cold December day, looking at the undulating horizon line from within *Crystal*, the paintings of Thomas Cole or Caspar Friedrich come to mind. Like the work of his predecessors, Thomas Schütte's sculpture has the power to tweak one's view of the landscape ever so slightly, making it both more dangerous and more sublime.

GRIGORI FATEYEV, principal and owner of AF architecture in the Berkshires, is working on Turn Park Art Space, a contemporary sculpture park in West Stockbridge, Massachusetts, which is scheduled to open in May.

PHOTOS

Interior and exterior views of *Crystal*, Thomas Schütte, 2015, at the Clark Art Institute. Photos: Grigori Fateyev

CONSIDERED

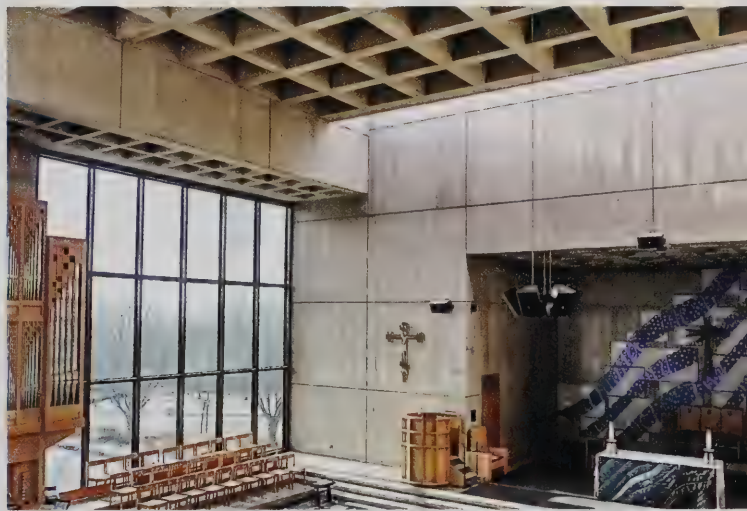
St. Paul's, Burlington, Vermont

The Cathedral Church of St. Paul is an unsung landmark. Overlooking Lake Champlain, this restrained and handsome example of Brutalism serves Vermont Episcopalians and is the seat of their bishop.

Burlington architects Thomas Cullins and William Henderson won an international competition in 1971 to replace the original 1832 church, an early Gothic Revival work by Ammi B. Young of Boston Customs House fame. The campanile and elegantly crafted concrete of the new St. Paul's echo ecclesiastical works by Marcel Breuer and Alvar Aalto. Yet inspiration for the cathedral arguably was Louis Kahn's First Unitarian Church in Rochester, New York, a decade earlier.

A square plan and movable chairs accommodate flexible worship as well as concerts. White oak furniture, ceiling coffers, and slate floors provide understated presence, while nails salvaged from the burned predecessor form the altar cross. The solid chancel wall blocks out the picture-window view, allowing only oblique glimpses of the lake and mountains. But it is light—admitted through skylights and clerestories—that graces the vessel of spirituality.

WILLIAM MORGAN, a Providence-based architectural writer and photographer, is the author of *American Country Churches*.

**PHOTOS**

Exterior and interior views of the Cathedral Church of St. Paul in Burlington, Vermont, by Burlington Associates, 1973. Photos: William Morgan

5 QUESTIONS

Michael Creasey

As general superintendent of the National Parks of Boston, Michael Creasey oversees the collaborative that includes Boston National Historical Park (all the sites along the Freedom Trail), Boston African American National Historic Site (north slope of Beacon Hill onwards), and the Boston Harbor Islands National Recreation Area. He led the creation of the Urban Agenda, a strategy to make the National Park Service relevant to all Americans, and sees himself not as a land manager but as an arbiter of ideas and ideals.



How can parks in Boston, with its constellation of properties, remain relevant to the lives of residents—that is, how are you staking claim to the city of Boston?

The National Park Service brand is strong as it relates to what people imagine to be national parks. They think of Yosemite, Grand Canyon, Yellowstone—scenic wonders of the West. But more than 30 percent of national parks are in urban areas. Changing the perception of the NPS is the opportunity for us in Boston—to recognize that it's the way to talk about national heritage. It's tied to the theme of revolution; what took place along the Freedom Trail was the momentum that led us to Philadelphia. And the African Meeting House story line is the story of social revolution. This was the foundation of the civil rights movement like no other place. Then, the harbor islands: one of the most polluted harbors in America became clean and worthy of being a national park because of an environmental revolution. I look at it under the banner of revolution and our ability to bring people to these places to talk about revolution from a historical perspective. We have platforms to present larger concepts within these landscapes, both historically and contemporarily.

How do we deal with historic properties in relation to issues we're grappling with today, such as sea-level rise and climate change?

When the Historic Preservation Act was created in 1966, it was a movement that put the National Register together and an overarching recognition that these architectural spaces were important; no longer were we going to demolish

neighborhoods without being thoughtful. We need to broaden our perspective on how we look at properties and how things like acid rain, sea-level rise, and alternative energy affect our structures. Many preservationists are already engaging in thoughtful debate about how we can balance historic preservation with climate change. It's not an easy answer: There are places you wouldn't want to see with solar panels or wind turbines.

In terms of equity, there are stories to be told about our past; how would you make those stories inform our future?

To the new immigrant coming from Syria or from Africa or Asia, what relevance do some of our historic neighborhoods and the Freedom Trail have to them? We have to make sure we are meaningful to all people and provide a way for them to see themselves in these stories. The Park Service's challenge is that constituents are primarily white and have the income to support national parks. Part of the Urban Agenda is how we make these sites relevant to everyone and find a new way of doing business.

Rather than just serve as wardens of landmarks that fifth graders visit once and then forget about, how does the Parks Service integrate historic sites into the everyday conversation of citizens?

The future of these places depends on becoming relevant to coming generations. Look at the demographics of our country: 80 percent of the population lives in urban areas. How do we make the parks pertinent within the cities people live in and make sure that we have stewards who are prepared to take care of these urban constituents and willing to tell

their new stories? One of the things that I feel has great promise is we have started the National Parks of Boston education collaborative to reach deep into the public school system to bring young people to the parks. We are working with the educators from all the historic sites to codesign curriculum that is place-based, a dynamic curriculum to engage students. To build a robust education program, we are working to bring voice to places that are significant and presenting these stories through the arts—from showcasing the Old State House for the story of the early makings of the revolution to bringing forth untold stories like how African Americans played a role in the Boston Massacre and were very much a part of the American Revolution. We need to make sure the audiences we are trying to reach are more diverse than what we gain through our standard marketing approach.

What do you love about Boston?

To be able to take the pulpit at the African Meeting House and speak at the same place where Frederick Douglass spoke is a moving feeling. To stand at Faneuil Hall—cradle of liberty—and speak at the Middle Passage ceremony, which is all about reconciliation for what this country received [from the enslaved people transported to the Americas and their descendants, who helped shape the city]. Being one of the few white people to speak was a tremendous opportunity. I live a splendid life because I work for an agency that is the holder of the American narrative.

Interviewed by **FIONA LUIS**.

The Well-Tempered City

What Modern Science, Ancient Civilizations, and Human Nature Teach Us About the Future of Urban Life

Harvard T.H. Chan School of Public Health

December 5, 2016

How do you describe the soul of a city?

For Jonathan Rose, author of *The Well-Tempered City*, the musical analogy that stirs his reading of great cities through the arc of civilization is Bach's *Well-Tempered Clavier*, which allows harmony between keys, not just within them. This complexity holds space for the essential soul, or principle, of the composition.

At a discussion moderated by Jack Spengler, a Harvard Department of Environmental Health professor, Rose was joined by Rebecca Henderson of Harvard Business School and NPR's *Living on Earth* host Steve Curwood. Rose laid out the qualities of a well-tempered city but posited that we lack the will to make equitable cities. Such a city has qualities we want for our inner selves: cognition, cooperation, culture, calories, connectivity, commerce, control, complexity, and concentration. If these operate in harmony, society achieves its highest purpose of taking care of its people. The ancient city of Uruk, in Mesopotamia, exemplified the integration of the "nine C's" and created a precedent that allowed art, culture, music, and literature to flourish. When these elements are out of balance—in the case of extreme income inequality, resource consumption, greed, or lack of purpose—the needs of citizens are no longer amply met.


Curwood suggested that our problem is "not technological or financial" but agreed that we lack the will. If we assume there is enough money to house everyone, enough schools to educate everyone, and enough food to feed everyone, why are we excluding some from being housed, educated, and nourished?

Where do our cities fall—or rise—in the scheme of the nation's future? Can our cities be the kind of places where we aspire to create well-being for all citizens? Rose suggested that yes, we have the means to make this vision a reality, but what we lack is trust. Investing in a shared sense of purpose—"we-ness," in his words—will allow us to develop the types of compassionate cities we crave.

KATIE SWENSON is vice president of design at Enterprise Community Partners.

BELOW

Photo collage from the cover of *The Well-Tempered City*.
Image: Courtesy of Jonathan Rose Companies



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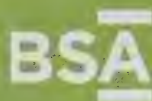
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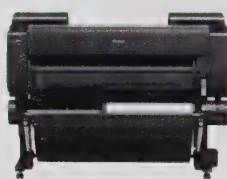


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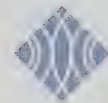


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EUREKA!

SPRING 2017


A sense of discovery—that moment when everything clicks—is one of the great satisfactions of the design process. In the following pages we survey the serendipity of design: the unexpected solutions, turning points in practice, and new ways of thinking that are always just around the next corner.

Apparatus, Caleb Charland, 2014. From *Fathom and Fray*, a photo series that explores the laws of physics. Image: Courtesy of the artist



TONICS AND PROVOCATIONS

Over the past several years, Cooper Hewitt, Smithsonian Design Museum curator Cynthia E. Smith canvassed the country, logging more than 50,000 miles in a search for design solutions to society's most intractable ills. The result was *By the People: Designing a Better America*, the third in a series of exhibitions at the Cooper Hewitt that celebrate the problem-solving capacity of design.



by Cynthia E. Smith

When I begin my research for an exhibition, I start with a thesis. For *By the People* I was exploring the intersection of poverty, prosperity, innovation, and design. That necessarily kept the inquiry open, which is appropriate because the challenges the American people face are often complex and systemic, and many require reckoning with a history of injustice. At its best, design improves people's lives and benefits

→ the communities where they live and work, but it was unclear as I began my research how many innovative and responsive designs I would find.

In fact, I returned with close to 300 different possible collaborative design projects, products, and proposals. Some are simple and elegant in their design response, embodying the spirit of the citizen designer, while others are multilayered strategies formed over time by many stakeholders. What they have in common is a drive to create more inclusive, healthy, and just places.

Designers provide vision, often combining disparate ideas, gleaning new possibilities for seemingly intractable challenges.

Whether the concern is persistent poverty, homelessness, mounting climate challenges, unequal education, or a fraying civic life, design can act as a catalyst for change. Experimental human-powered vehicles that challenge the US transportation system, an innovative permanent housing approach that converts one community's attitude toward its homeless population, or a landscape architect's urban design for a shrinking postindustrial city that catalyzes economic, social, and environmental transformation—these are designs that challenge the status quo and ignite hope.

Architects, designers, and planners are well positioned to engage complex systemic problems and can often help expose underlying inequalities. Because social problems grow from an interlocking web of conditions, working across disciplines—an ethic established early on in design school—is important in helping break through silos in pursuit of alternative approaches.

Often the responses are multidimensional, bringing together different disciplines to rethink entire systems. One example from *By the People* is a complete redesign for the delivery of post-natural disaster housing. In Texas' Lower Rio Grande Valley, typical federal disaster relief has left hundreds of low-income families living in substandard conditions for years after hurricanes devastate their neighborhoods. Determined to foster the social, physical, and economic resilience of the communities while restoring their homes, a team of architects, policymakers, housing advocates, community developers, and organizers collaborated with residents to develop the RAPIDO Rapid Recovery Housing program. The new model helps vulnerable families navigate the disaster-relief process, delivering higher-quality housing while avoiding displacement and keeping social ties intact.

Designers provide vision, often combining disparate ideas, gleaning new possibilities for seemingly intractable →

PREVIOUS SPREAD

New York City Department of Probation Waiting Room, with colorful wall patterns and "faux real" inspirational posters. Architect: Biber Architects. Photo: © David Sundberg/Esto

RIGHT

Orbit, an electric vehicle designed by THE FUTURE PEOPLE, Michigan, 2012. Made of aluminum, steel, electric motor and controller, battery, and bicycle parts. Photo: © THE FUTURE PEOPLE

FAR RIGHT

SuperUse Pavilion, a public-event structure made from a fueling-station canopy, with a green roof that absorbs carbon dioxide and filters rainwater, designed by Hans Herrmann and Cory Gallo, with architecture and landscape architecture students, for the Oktibbeha County Heritage Museum in Starkville, Mississippi. Photo: Megan Bean/© Mississippi State University







→ challenges. They are directly engaging communities, listening, valuing, and incorporating local expertise. Many call for emphasizing process over outcome as a way to build local capacity, from hiring area youth as part of the design team to creating neighborhood design residencies.

Too many American communities—in former industrial cities, on native lands, in older first-ring suburbs, and in small rural towns—have been abandoned by a culture of disinvestment. Designers, architects, landscape architects, students,

artists, historians, and entire communities are describing new ways to navigate the legacy of neglect that public and private policies have wrought. Communities are learning to recognize and value existing assets in both the natural and built environments that have long been overlooked. This might mean recycling or retrofitting blighted properties and abandoned infrastructure to stitch neighborhoods back together. In Mississippi, for example, an abandoned service station canopy was converted into a public-event structure with reclaimed materials that support a vibrant green roof, teaching architecture students, residents, and area tradespeople alike to see opportunity in what is discarded or undervalued.

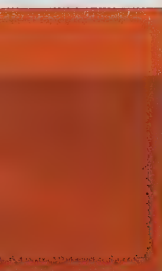
The notion of design addressing critical social issues is not new. The current movement has its roots in the 1960s and '70s, such as when the International Council of Industrial Designers joined with UNESCO in 1963 to use design on several international development projects for the “betterment of the human condition.” In 1964, C. Richard Hatch founded the Architects’ Renewal Committee of Harlem (ARCH), one of the nation’s first community design centers, which helped low-income residents influence planning in their own neighborhoods. More broadly, in 1973, the British economist E.F. Schumacher wrote *Small Is Beautiful: Economics as if People Mattered*, the influential text that introduced “appropriate technology,” an approach to manufacturing locally using area resources. These and other developments wove

ABOVE

Cross-Border Community Station rendering, demonstrating environmental, social, and cultural dynamics, by Estudio Teddy Cruz + Forman and UCSD Cross-Border Initiative, 2015. Photo: Estudio Teddy Cruz + Forman (Rene Jaime Torrero)

BELOW

Crest Apartments, a sustainable 64-apartment complex for formerly homeless veterans, by Michael Maltzan Architecture with landscape by SWA Group, in Van Nuys, California, for Skid Row Housing Trust, 2016. Image: © Michael Maltzan Architecture, Inc.



their way into a range of socially responsible design strategies over the decades.

Today the field of socially engaged design continues to expand, perhaps due to increased global connections. In 2000, the United Nations' Millennium Development Goals focused the world's efforts on ending poverty, combined with improved communications and new technologies, to spark innovative approaches addressing vexing issues both locally and internationally. Global environmental challenges and increasing income inequality have added a new sense of urgency. Communities are exploring alternative social and economic systems, often not waiting for outside help but

creating local infrastructure that support more inclusive, equitable, and sustainable places. Design gives form to ideas. Right now, it is more critical than ever that what we value as a society is expressed in what we create.

Despite—or perhaps because of—looming new challenges, I remain cautiously optimistic about the future. The next generation of designers and architects is focusing on social justice as never before. The collaboration of today's young designers with communities and the solutions they imagine together are a tonic for uncertain times. Not deterred by barriers, they understand the urgency for advocating, designing, and building a more just and equitable world. ■



IMAGES

RAPIDO Rapid Recovery Housing, a Texas program that enables faster replacement housing for victims of natural disasters, designed by bcWorkshop's Omar Hakeem AIA, Elaine Morales-Diaz, Lisa Neergaard, Jesse Miller, Brent Brown AIA. It deploys a 400-square-foot core unit after a disaster, then architects and contractors customize the structures to meet each family's needs in as few as 90 days, at half the typical cost. Images: Courtesy of bcWorkshop

TOWARD AN IDEAL

by Justin Crane AIA

The divide between architecture school and practice is well known. Coursework typically focuses on original thinking and creatively presented concept designs; the real world rewards a well-functioning building delivered on time and under budget. Unlike high-tech or the life sciences, our country's notoriously conservative building industry rarely allows for implementation of exciting research. Yet as Karsten Harries writes in *The Ethical Function of Architecture*, "Architecture has an ethical function in that it calls us out of the everyday . . . It beckons us toward a better life, a bit closer to the ideal." Creating that better life feels slow going when we can't easily incorporate new research into what we build.

The most diligent studies in the construction industry, including invaluable experimentation on energy-efficient systems and assemblies, have been at engineering societies and Department of Energy national labs. But how can we seamlessly integrate this into the profession as opposed to simply responding to its results? Ultimately, all the research carried out within schools or labs is advantageous only if it is understandable to those in practice and beneficial to a broad audience. This requires our rigorous research to be available to those architects with access to clients and builders.

In response to this divide, firms are exploring ways to make research part of their office practice. For example, Katherine Darnstadt AIA of Latent Design spends an atypical amount of time analyzing clients' needs. This allows her to better understand relevant socioeconomic issues and expand the value of architectural practice by providing services that range from grant writing and developing STEM (science, technology, engineering, and math) curricula to programming and, finally, building design. Payette has a paid research director who spends half of her billable time on formal research, allowing the firm to confirm manufacturers' claims and make more knowledgeable choices of materials and systems. An instance of this is its comparative study of triple glazing and double glazing with room-side low-e coatings in order to build a "glazing and winter comfort tool." Gensler, a giant in the profession, has a staff of five researchers and a firm-wide RFP process through which approximately 30 employee-led teams complete studies every year.

Is the profession as a whole benefiting from the firms that have committed to research? These offices often share results on their websites or, in select cases, via annual publications. Yet it remains difficult for practitioners to sort through information coming from multiple sources and completed to varying levels of rigor.

Two recent initiatives are catalysts for the weaving of exacting research into practice. The first is a partnership between the AIA and the National Institute of Building Sciences to create the Building Research Information Knowledgebase, aka BRIK. This clearinghouse of architectural research, launched in 2013, harbors publications created through partners with rigorous review processes, ranging from private practices such as Perkins + Will to nonprofits like the International Academy for Design & Health. The goal of BRIK is to make research transparent and accessible; it also focuses on research that can be directly applied to professional work—from techniques for creating resilient architecture to best practices for coatings on historic buildings—with topics organized broadly into design, economics, and practice.

The second initiative is the design profession finally taking advantage of techniques pioneered in other industries. In 2016, MIT's School of Architecture and Planning started an accelerator, called DesignX, that will speed the growth of start-ups—strengthening the connection between academic research and viable design businesses or nonprofits. DesignX selected its first class in December, supporting proposals ranging from

DRY TOWNS



Perhaps you've heard of gun buyback programs, whereby local police departments pay for surrendered firearms, no questions asked? Now drought-stricken California towns are offering **lawn buybacks** to encourage water conservation. Residents can get \$2 for each square foot of water-wasting lawn they surrender—and discover the beauty of native drought-tolerant plants.



WHEN WALLS GET IN THE WAY

by Carl Solander AIA

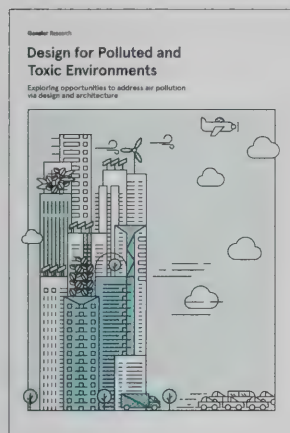
By the time I arrived at MIT to study architecture, Building 20 was already a much-eulogized place of legend. It was often referenced in studios as a place where the occupants could reshape space according to their needs, a place of innovation where the building served as a catalyst for collaboration and experimentation. This was considered desirable, even radical,

The reality of Building 20 is that it was poorly constructed, a generic space built quickly in 1943 to house research facilities for weapons and defense systems.

for budding architects: a place where the walls are not fixed, a place that breathes with dynamism, a building conceived not as composition but as infrastructure for events and interactions. The reality of Building 20 is that it was poorly constructed, a generic space built quickly in 1943 to house research facilities for weapons and defense systems—essentially a warren of rooms off of corridors with exposed piping and conduit. It lacked the preciousness that would cause one to hesitate before bashing holes through the walls. When my structures class toured the site during the construction of Frank Gehry FAIA's Stata Center, which replaced Building 20, we marveled at the massive concrete transfer beams, hanging columns, and other structural acrobatics. This had been designed as a highly specific space where the needs of the occupants had been studied, categorized, and then fit into a master scheme; where the spectacle of architecture would be the organizing principle; and where the occupants would be part of the spectacle. Visiting the occupied building a few years later, I found it hard to imagine the architecture adapting easily to needs that may not have been considered.

Is contemporary institutional architecture, which often revels in spectacle and refinement, able to provide the catalytic influence so celebrated at Building 20? Or were the scientific breakthroughs achieved at Building 20 simply a result of a time of particular innovation?

I recently visited the Novartis buildings in Cambridge with a scientist friend who conducts research there. Walking the halls of the newest additions to the campus, designed by Toshiko Mori FAIA and Maya Lin, I could see ideas that had bounced about in my MIT architecture studios finding →



virtual reality technology that enhances communication between project teams to sensors that monitor human behavior and may assist firms with postoccupancy studies. The curriculum of the accelerator program includes several criteria, two of which are typical for start-ups: user-friendliness and the ability to handle the complexity inherent in the design process. A third criteria stands out, however, for its idealism: a commitment to social justice and mindfulness of the diverse society in which we work.

The original thinking that comes from academia and rigorous research is necessary to create “a better life, a bit closer to the ideal”—and one that is not circumscribed by the constraints of time and profit. Yet this research will be effective only if it is implemented in the real world multiple times and at a large scale. Architectural practitioners and researchers need one another. The more opportunities there are for sharing ideas, the more likely we are to influence not only the lives of well-heeled clients but also the lives of all those who inhabit the world we build. ■

JUSTIN CRANE AIA is an associate at Cambridge Seven Associates.

LEFT
A sphere from folded circles, by Learning Beautiful, an education start-up chosen for the first class of DesignX, a new MIT accelerator. Image: Courtesy of Learning Beautiful

ABOVE
Covers from Gensler's research reports

→ expression. Hallways are wide and populated by niches and nooks; intimate glassed-in rooms allow for private phone calls or small conferences; tables and kitchens provide space for coffee breaks, chance meetings, or larger informal gatherings. The monumental stair that projects from the façade of the Mori building connects many of these informal spaces and provides balconies for contemplation with a view of the courtyard designed by Michael Van Valkenburgh FASLA. An elegant and dramatic atrium off of the main entrance offers a private agora for the Novartis polis.

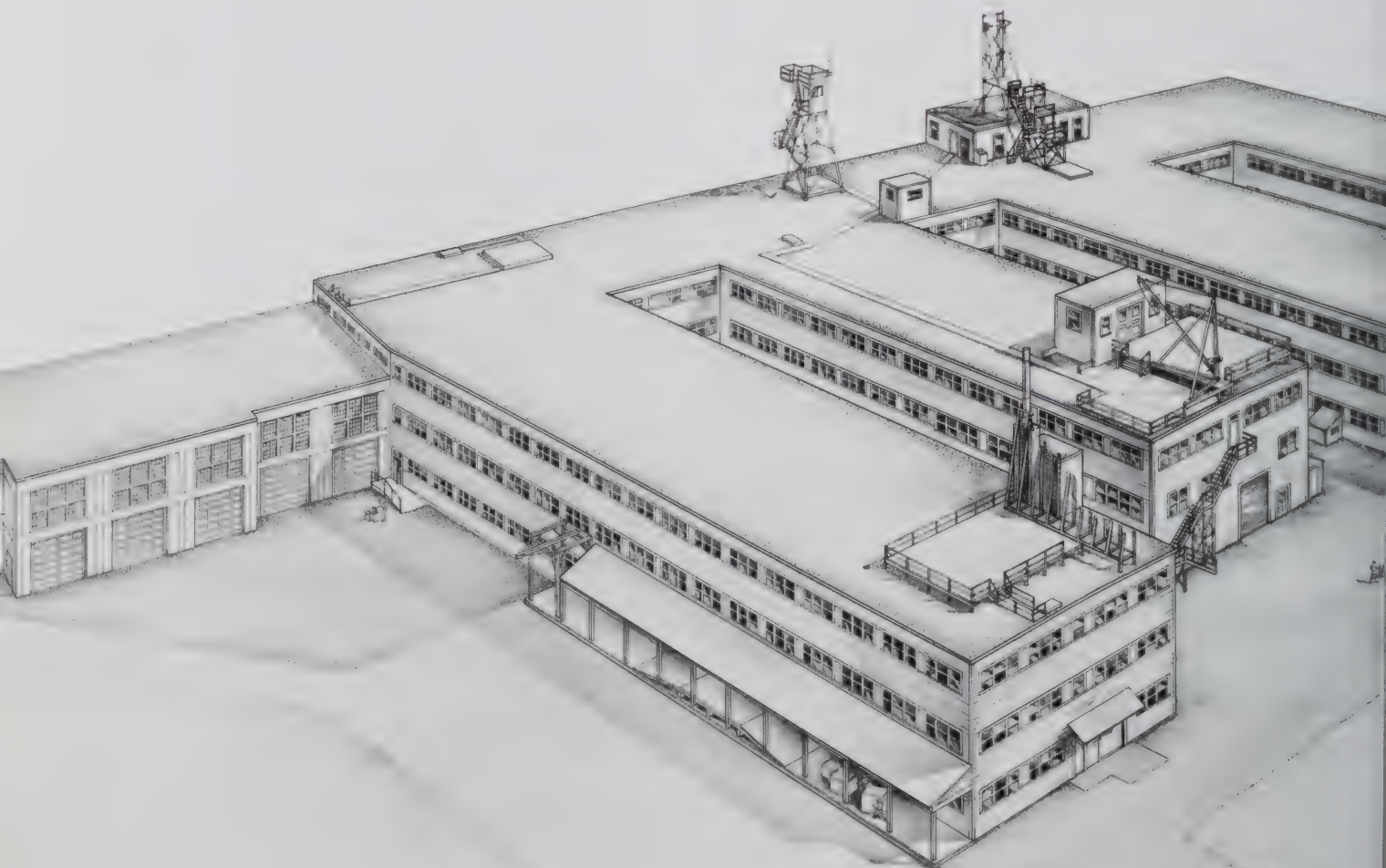
The design seems to have developed from a notion of urban space, with public ways for chance encounters flanked by more intimate spaces with varying levels of privacy. Yet my scientist friend emphasizes the importance of the lab space. His desk, like most, is 4 feet long and sits in a big open work space with dozens of other desks organized in neat rows. Lab benches and standing desks that are shared within this space are the places where experimentation and collaboration occurs for him.

Would this utilitarian setup—modular, secure, and circumscribed—in another building generate the same discoveries as the scientists at Novartis hope for? Is it the responsibility of architecture to project a sense of creative inquiry? Whether the spaces provided for spontaneous

meetings function as intended may be immaterial, as long as they embody the institution's desire to foster innovation. Maybe ideas hatched in these corridors would not have taken shape in a more constrained and uncomfortable space, ideas that then inform discoveries made in the lab.

My friend talked about his collaboration with a scientist at Harvard Medical School, exploring ways to use a technology developed by one to research the biological systems studied by the other. This collaboration, sanctioned by both organizations, is something that hatched through a chance meeting at a local conference and was incubated in local pubs. Perhaps more so than the buildings that provide a place for research, the dense community of scientists in Cambridge and Boston is crucial to collaborations that can lead to scientific discovery. In that light, the interiorized urbanity of the Novartis buildings is appropriate. A privatized extension of the city, where invited collaborators can come to be among peers, they provide semiprivate spaces for casual interaction and private spaces for serious work. Knocking down walls is probably not necessary; multimillion-dollar pieces of equipment are. The funny thing about Building 20 is that the architecture was actually in the way. ■

CARL SOLANDER AIA is a principal at Reverse Architecture.



BELOW

Drawing of Building 20
from the MIT Museum
collection. Image:
Courtesy MIT Museum

DIVERSITY

OPEN A NEW WINDOW



by Kordae Henry and Rose Florian

Think back to a moment in time that changed the way you perceived the world. A single moment may not come to mind. Instead, a combination of elements is what more likely makes up that moment.

Henry: I remember leaving the studio at 3:00 AM after preparing for a design review. Riding my bike across the South Street bridge, I was met with red and blue flashing lights, hit by a police officer in his issued truck, and viciously laid out onto the ground. Next thing I knew there was a pistol pointed in my direction.

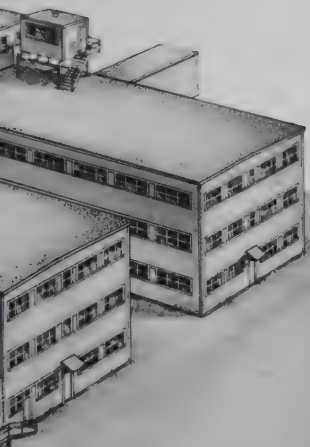
Florian: Growing up in a Dominican household, I was told to act a certain way, do my hair a certain way, and speak a certain way. It was all to hide our blackness while embracing white culture. At some point during graduate school, I realized I was imitating the idea of someone. I didn't even know what being me meant.

For us, the experiences that led to those moments laid the groundwork for the digital exhibition *Just Not The Same*. We created a series of architecture cutouts—an entourage for renderings—specifically highlighting people of color, human beings with skin complexions between that of the night and a shimmering

penny. The exhibition is science, psychology, architecture, and art all wrapped into a digital conversation.

Our purpose is to increase our sensory reach, break down social structures through art, and allow for a window into new worlds—to help us all see things differently. When architects take on projects, each one requires a sensitivity to space and narrative. We should always want to broaden our definition of the practice.

Traditions restrict innovation in our profession. We believe we are now at a tipping point, where architecture not only seeks an aesthetic value but also strives for equity. With *Just Not The Same*, Latinos and African Americans can have a place in architectural history. We made these cutouts as an effort to focus on the role of architects as narrators. How do we imagine the future, and who occupies its domain? When we speak of equality, what factors are in play? We strive to dissolve the constructs of the 18th-century Three-Fifths Compromise, which is still prevalent today and in too many cases continues to affect the thinking of architects. With *Just Not The Same*—free digital cutouts of people of color that students and architectural firms can place in their imagery—we →





see new opportunities for the profession to become more inclusive and sensitive toward a collective design process.

Designing a building requires the study of the practice and ourselves. We can give new meaning to our intentions by understanding that what we create and how it is executed has an impact. A digital exhibition and catalog invites us to approach architecture in an intrinsic way to achieve better ways to tell stories.

Just Not The Same is not just a response to the underrepresented ethnicities displayed on architectural cutout websites; it is also a way to empower individuals. When giving designers a new architectural tool, we open opportunities for change. By using the cutouts, we invite participation in a written and visual narrative that we hope will evoke systemic change in the way we speak to the world, where we no longer use the word “them” but change the narrative to “us.” ■

KORDAE HENRY, a design associate at MASS Design Group, and **ROSE FLORIAN**, an architecture and urban design student, are the creative directors of *Just Not The Same*.

IMAGES

Figures from *Just Not The Same*, a database featuring scale figures of color, provided as a way for the design world to acknowledge underrepresented communities. Images: Courtesy *Just Not The Same*



TRANSPARENCY

WE CAN MOVE MARKETS

by Russell Perry FAIA

The more you probe the design process, the more you discover that, though architects and designers have access to a lot of information on the building products they select, they generally know little about the constituent chemistry of these materials. With food or personal care products, by contrast, detailed ingredient disclosure is common, likely influencing consumers' purchasing decisions. These disclosures over the past several decades have changed buying patterns and created major market segments. While some shoppers blissfully load their cart with peanut butter containing 25 ingredients, others make the informed choice of a product made from just two: peanuts and salt. Both products are perfectly legal, but consumers can at least make a choice based on useful information.

Happily, we have been steadily moving into a building-product economy where designers will have this kind of information and will be able to add it into the complex calculus that is product selection. We can see examples in the industry where shining a bright light on problematic, even hazardous, substances has led the market to change in favor of greener chemistry.

Look at the now-historic example of formaldehyde in insulation. In June 2001, the newly published LEED version 2 flagged urea-formaldehyde in composite wood and Agrifiber products as a substance of concern. Interestingly, this was the first substance specifically identified within LEED for a phaseout related to installer and occupant health. It led to designers and specifiers paying more attention to formaldehyde in its many uses in building products. In 2003, the Green Guide for Health Care introduced a credit for the use of formaldehyde-free insulation products. By 2007, when the Living Building Challenge Red List targeted added formaldehyde in all building products, many designers and specifiers were already searching for alternative products free of this known human toxicant. By 2013, the early drafts of LEED version 4 began to address a wider range of formaldehyde avoidance, specifically related to insulation.

The response from the market was swift. In 2015, when the Healthy Building Network surveyed formaldehyde releases from domestic residential insulation factories, they saw a precipitous decline in releases by 90 percent between 2005 and 2014. In the absence of state or federal regulation, the correspondence of toxicants being designed out of building products with designers taking interest in avoiding specific hazardous substances represents a virtuous cycle that can be accelerated through material ingredient disclosure.

The cycle of product chemistry improvement runs through several specific steps: inventory (what's in it?), screening (what hazards are associated with those ingredients?), assessment (where are the greatest opportunities for improvement?), and optimization (how do we develop better products for the market?). Of these steps, designers are most interested in information associated with inventory and screening. This is where the Health Product Declaration (HPD) comes in. Developed in 2011 as an open standard, HPD provides a format for manufacturers to communicate a product's chemical constituents and associated hazards. While designers can use this information to shun certain hazards—such as formaldehyde—these disclosures, more important, provide an impetus for manufacturers to reformulate their products in light of public disclosure by competitors using cleaner chemistry.

All of us can remember specific health hazards being designed out of our lives through consumer action—individual shoppers making choices one at a time: nitrites in processed

meats, trans fat in prepared foods, volatile organic compounds in paint, phthalates in children's toys, or bisphenol A (BPA) in water bottles. Informed designers armed with disclosure documentation can provoke the same kinds of reforms to building products, leading to the day when we can easily design a building free of phthalates, halogenated flame retardants, BPA, or formaldehyde, to name a few of the most notorious. That day will come when the power of transparency definitively alters the building materials market.

A fundamental difference between this transition and those under way in other parts of the economy is one of our leverage as designers and specifiers. In a \$10 million project, we may be specifying \$6 million worth of building materials, perhaps more. Our reach is significant. By insisting on the universal use of HPDs and other disclosure tools, we can change the industry where we have the most impact. ■

RUSSELL PERRY FAIA was director of sustainable design for SmithGroupJJR from 2005 to 2016.



ABOVE
An Investigation in Materials from *Perpetual Motion*, an installation by Studio Dessuant Bone for the Biennale Interieur 2016, Kortrijk, Belgium. Photo: Courtesy of Studio Dessuant Bone



FOR THE BIRDS

According to the American Bird Conservancy, 980 million birds are killed every year in collisions with tall glass buildings. New York-based Ennead Architects is working with conservation groups to research what glass treatments and lighting conditions birds will avoid. Now they've joined with the US Green Building Council to develop a LEED credit for incorporating "**bird collision deterrence**" into building design. It's something to sing about.

EMOTION

WHAT THE HEART SEES

by Coco Raynes

As designers, we have all experienced the delicious moment when nothing can be added nor deleted, when the design has reached its final form—the “I’ve got it!” feeling. It can be the perfect spacing in typography, the utmost simplicity of a logo, or the harmony of an architectural space. It is done, there is no return, it is looking at you. And we are delighted.

The attempt to reach perfection is what designers would like to do daily, if not for the mundane but necessary administration attached to each project. And when we come close to achieving it, we feel exhilarated because we strive to excel, regardless of the project scale. Perfection, when encountered, can trigger very strong emotions.

I still remember entering the Cathedral of Chartres, France, for the first time. Following the tradition of the annual Catholic student pilgrimage, which goes back to ancient times, I had walked the nearly 50 miles from Paris. As I am from another faith, I had primarily gone for the promenade with my pals from the ENSAD—the École Nationale Supérieure des Arts Décoratifs. Quite a promenade, indeed! A walk of two and a half days, with the spring heat and the accompanying blisters.

As I entered the majestic Gothic nave, my eyes raised along the ribbed vaults to the 120-foot arcs, I discovered the soft light coming through the intricate stained-glass windows, warming the chiseled stone work. I was in awe, covered with goose bumps.

I had been touched and overwhelmed by the harmony and architectural beauty of the cathedral. I was witnessing perfection.

I was surprised by my intense physical reaction: The nature of my shivering was nonreligious; the cool temperature of the nave was certainly welcomed after the march in the afternoon heat but not cold enough for shivering. I had been touched and overwhelmed by the harmony and architectural beauty of the cathedral. I was witnessing perfection.

The confrontation with this architectural tour de force was heightened by the underlining of its legends and secrets: the esoteric beliefs from a sacred druidical temple on which the present cathedral rests, the sacred geometry, the legend of the Templars, the luminescent enigma of the stained glass, which has been lost and never duplicated.

This colossal work had been accomplished in a mere 26 years (1194–1220) with the rudimentary construction equipment of the time, to glorify eternity and the power of the Church. I had experienced exactly the purpose of this cathedral: to intimidate by making you feel insignificant!

Yes, architectural spaces around us trigger different emotions. It can be feeling claustrophobic in the dark subway of New York City or almost nostalgic in a grand hotel lobby—the Plaza maybe—





where the decor and armchairs look so comforting that you want to sit down for tea and conversation, the old-fashioned way. A well-designed hospital lobby can make you feel secure: It conveys efficiency. Bank lobbies are stern and expected to be: Your money—or no money—is a serious matter.

Or you might feel protected in the interior patios of Spanish Colonial houses, where very thick walls isolate you from the outdoor heat and commotion. The labyrinthine streets of Venice prompt curiosity: You want to get immersed, discover, and maybe resurface tomorrow.

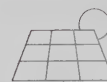
The architect cannot predict nor control people's reactions: Once public, buildings and spaces take on lives of their own. The public may not be that interested in the academic architecture

diagram, but people do respond to the emotional experience. Unfortunately, architecture is losing its distinct identity around the world, starting with airports. Everything will soon look the same, and our emotional encounters will also be diminished. ■

COCO RAYNES is president of the environmental graphics and universal design firm Coco Raynes Associates.

ABOVE
Stained-glass windows, Chartres Cathedral, France.
Photo: Fredrik Rubensson/Creative Commons

LEFT
South transept façade, Chartres Cathedral, France.
Photo: TTaylor/Creative Commons



LET THE SUN SHINE IN

Doubling as roof shingles, **Tesla's solar panel tiles** are made from textured glass to mimic shingles. They're efficient but also potentially cost prohibitive—there's the added price of the battery (or batteries) to store electricity. Still, if practical issues such as production and construction fees are resolved to be more competitive, the tiles could be an off-the-grid game changer.

A PLAN TAKES ROOT

by Matthew Urbanski ASLA

Brooklyn Bridge Park has been an experimental, paradigm-shifting project because the vision for the park was audacious at its very roots. The Brooklyn Bridge Park Development Corporation, created through a joint agreement between the City and State of New York, gave our team the responsibility to address a broad variety of issues that aren't typically directed by landscape architects. These included revenue planning, development guidelines, urban infrastructure, homeland security, environmental sustainability, and sea-level rise. We were given unusual tools to create a new urban context in which the park would thrive—a city-making project as much as a park-making project.

We saw a complex, resilient, dynamic water's edge as the core park experience. So, through planning and design, the idea was to vary the things that happen along the 1.3-mile waterfront: bringing people down to meet the water's edge and also creating opportunities for raised prospects. Other features—such as a

remnant pile field, a spiral tide pool, and a salt marsh—called attention to the unique ecological context of an urban tidal estuary.

At the time, we were also working on another waterfront park where tidal surge was a concern, and we had been contending with tight constraints that limited our ability to manipulate the grade, which had been a source of frustration. We were in the schematic design level, with an already developed grading plan for Brooklyn Bridge Park, when—clichéd but true—I was in the shower when I realized that although we were constrained in the other park, at Brooklyn Bridge Park we actually *could* raise the overall elevation.

By starting with a higher base elevation, the bottoms of the root balls of the trees we were planting—or at least the vast majority of them—would be above the 100-year flood line, which at that point was set at 1 foot higher than any flood ever recorded on the site. Even though the surge from Superstorm Sandy came in higher than our extreme flood benchmark, my shower epiphany turned out to be fortuitous because when the storm came, the only trees that suffered were the ones planted at the park entrances, which were low points because the park needed to meet the grade of the city streets.

Raising the park was an intentional strategy for protecting it against sea-level rise, but other more intuitive aspects of the design were also helpful when it came to the park's performance in an extreme-weather event. For instance, we replaced long extents of relieving platforms and retaining walls along the water's edge with riprap, which is a wall system of large irregular stones stacked on one another. Whether built of wood, metal, or concrete, a system of water-front-relieving platforms and retaining walls relies on tension coming from the land side and compression from the

water side to stand. Riprap, by contrast, works with gravity and is fundamentally self-stabilizing.

Although there is a logical urge to worry about the destructive force of flood-water coming in, it is actually the force of the water on its way *out* that is typically the cause of a wall being blown out. When the flood recedes, the ground is saturated, and hydrostatic pressure can build up behind a solid wall, causing failure. The generous gaps between individual stones in a riprap wall create a porous edge that offers abundant opportunities for the water to flow out. Even if there is some movement of individual boulders, that's fine because although the riprap system is robust, it is also fundamentally mutable. It will be there until the next ice age.

There was a fair amount of complexity in how this played out, but the way that our team made Brooklyn Bridge Park climate-ready is almost ridiculously simple: We raised the site, especially the trees, and we made our water's edge a porous gravity wall that doesn't try to hold the water back. We relied on time-tested and technologically simple solutions. Now that more than six years have passed since the first sections were open, and four years since Sandy, the plants have begun to grow in, and it is amazing even to us the degree to which urban nature has become the image of this highly urban park. This fundamental rebalancing of “natural” and “human made” was part of our strategy for resiliency but also essential to making a welcoming park on this site. ■

KNOW YOUR HONEY LOCUST

The New York City parks department has mapped the location of **every single street tree** in all five boroughs—nearly 700,000 of them—with the named variety, trunk diameter, and environmental benefits of each (including storm water diverted, air pollutants removed, and carbon absorbed). Just in case you need another reason to love the urban canopy.



MATTHEW URBANSKI ASLA is principal of Michael Van Valkenburgh Associates, designers of Brooklyn Bridge Park.

RIGHT

Brooklyn Bridge Park, New York City, by Michael Van Valkenburgh Associates, landscape architect. Photo: © Elizabeth Felicella/Esto



RIGHT
Somerville Rooftops,
by James Weinberg.
Image: Courtesy
of the artist



HOME FOR GOOD

by Deborah Fennick AIA

With systemic change on Somerville's horizon, can the city preserve its soul?

A densely inhabited 4 square miles just minutes from downtown Boston, Somerville is already a highly sought after place to live. With the Green Line extension promising to fill in gaps in MBTA service, it will become only a hotter place for development.

As Somerville marches forward, however, many current and long-term residents are left reckoning with an uncertain future. The city struggles with how to avoid a fate that is affecting similar urban communities across the nation: the displacement of the very residents who have helped shape their communities into the desirable places they are today. Somerville hopes to buck this trend, looking at ways to leverage large- and small-scale growth to achieve the community's goals. But can it hold on to the socio-economic, cultural, and ethnic mosaic of the people who live there? Is it possible to provide affordable housing options targeted at a range of income levels?

The city's political leadership and a smart, engaged citizenry have become partners in envisioning the Somerville of 2030, with a focus on housing affordability as a particularly urgent challenge. The City's Office of Strategic Planning and Community Development is recrafting its zoning ordinances around the 100 or so comprehensive goals and priorities articulated by the community itself during its three-year-long "SomerVision" process. The values and personality of Somerville permeate the new code, which is designed to address the quality of urban life, in part through several ambitious provisions that will support the construction of inclusionary housing.

Although the zoning overhaul will primarily expand the city's robust housing affordability efforts for new construction, much of Somerville is already built out. Consequently, a brain trust of community groups, led by the Somerville Community Corporation (scc), has looked to existing housing stock in established neighborhoods as a source of affordable units. Most of this stock is two- and three-family dwellings, and much of it is being lost to speculation.

Enter Somerville's 100 Homes Initiative. This entrepreneurial strategy captures existing properties available on the open market, competing for them like a serious buyer, which in this market means acting nimbly and paying with cash. Once acquired, these units are modestly rehabbed and become permanently deed-restricted at various affordability

rates. With an initial goal to create 100 new affordable units, the initiative was launched two years ago with enthusiastic backing from the mayor's office.

The 100 Homes program—funded primarily through subsidies provided under the Community Preservation Act, adopted by Somerville voters in 2012—preserves not only individual buildings but also a community's character. With a credit line from the Massachusetts Housing Investment Corporation (an affordable housing lender), the scc can make an offer on a property like a cash buyer.

Can Somerville hold on to the socio-economic, cultural, and ethnic mosaic of the people who live there?

The program is working. After a two-year pilot phase, five properties have been acquired and a sixth is under agreement, with a yield of 14 new affordable units scattered around the city.

As a result, many current tenants can stay put after the sale of their building rather than face eviction as the property is renovated to capture higher rents or be resold. A model scenario for the program is for scc to buy a property occupied by tenants who qualify for affordable rent. No one would be displaced. An ideal scenario is to purchase an owner-occupied three-family with income-eligible tenants in two units and maintain the owner's unit at market rate. The result would be a property with a financially sustainable mix of affordable and market-rate units.

With progress to date, the program is now being evaluated and tweaked. 100 Homes delivers units quickly, in contrast to the slow-moving process that encumbers state-funded and federally funded housing initiatives, though the group is still working out how to efficiently and fairly place tenants in the new units. Eventually, scc hopes to transition some units to homeownership as affordable condos.

What is the future of 100 Homes? Given the urgency, the scc is contemplating how to scale up the program. Could a 500 Homes initiative be sustainable? As Somerville continues its building boom and home prices skyrocket, it will become increasingly difficult to acquire and create affordable units for the program. Let's see what Somerville leadership comes up with next. ■

DEBORAH FENNICK AIA is design principal at Fennick McCredie Architecture.



NURTURE WITH NATURE

The sad truth these days is that "bad behavior" in students can often be a consequence of traumatic circumstances. To address the social and emotional needs of stressed-out students who have difficulty learning, architects MDS/Miller Dyer Spears created the **trauma-informed design** at Codman Academy Charter School in Dorchester, Massachusetts. Gently curving hallways, different-colored floor tiles scattered like fallen leaves, and glass-walled rooms with grasses and twigs sandwiched between panes embody the theme "A Walk in the Woods."

A MEASURE OF IMPACT

by Sam Batchelor AIA

"It's not about your greatness as an architect, but your compassion." —SAM MOCKBEE

The Rural Studio was born out of the design/build movement that was part of an architectural counterculture in the 1970s. Steve Badanes, a former teacher of mine who runs the University of Washington Neighborhood Design/Build Studio, is often referred to as the "godfather of design/build." He and a group of colleagues from Princeton University, who called themselves the Jersey Devil, were looking for an authentic process that connected the designer and the maker more closely when they did their first project together in 1972. They built single-family homes and lived on site in a nomadic existence that was emblematic of the time.

When Sam Mockbee founded the Rural Studio in 1993, he cited the Jersey Devil as a significant influence on his thinking. But where Jersey Devil was a nomadic practice, the Rural Studio is intensely place-based and is now inseparable from Alabama's Hale County. The focus is much more outward, in terms of the undergraduate studio's intention to be a change-driver in its community.

When Andrew Freear took over the Rural Studio after Mockbee's death in 2001, he elevated the charge to a broader goal. Where Mockbee was focused

on creating dignity through design with individual houses and community building projects, Freear is trying to address it systematically with projects such as the 20k house—a multiyear endeavor to create a locally built rural home for less than \$20,000 in materials. Badanes, no stranger to activism himself, takes a similar approach with the Neighborhood Design/Build Studio. Founded in 1990, it takes on projects with community clients working toward improving Seattle's neighborhoods.

As a student of Badanes' in the early 2000s, I was inspired by these two studios; they formed the nucleus of what would become the Community/Build Studio at Massachusetts College of Art (MassArt). Founded in 2009, it follows Mockbee's model of architectural activism and incorporates it with Badanes' emphases on communication and consensus building. We seek out projects in Greater Boston in which we can design and build a new piece of infrastructure for the public or underserved. We make a conscious decision to work locally because there is no shortage of groups that could benefit from the creative energy and enthusiasm inherent in architecture students, particularly those who are embedded within an arts school.

We also keep our projects small enough to ensure that our group of eight to 12 students can work on them, from concept to completion, in the 11-week summer session. This shields us from engaging in the design/build "arms race" that has taken over many schools competing to design larger, more complex projects by stretching the effort out over multiple semesters and student groups. More important, it allows us to illustrate to students the power and impact their projects can have. Coming to the site when it is blank, they experience the "before" condition as the status quo for our clients. By the end, having transformed the space, students understand that they have created something permanent—something that will become the new normal for the client group that they have engaged with every day.

At the Dennis C. Haley school in Boston's Roslindale neighborhood, the studio transformed an overgrown corner of the yard into an outdoor classroom to support an urban agriculture program. At summer's end, our students were proud of the beautiful structure that occupied a once-neglected

A CLASS ACT

Create the next generation of designers? Check. Build critical infrastructure and sustainable systems? Check. Change lives of millions of Africans? Check. The MASS Design Group's **African Design Center** aims to train graduates of a two-year program, match them with international experts, and unleash human-centered design onto a continent whose population growth is projected at 1 billion over the next 20 years.





WELLNESS

TIME TO HEAL

by Kaki Martin ASLA

Remember the last time you navigated through a hospital for a test? Did your blood pressure rise as you tried to figure out which line to get in, which elevator to take? Have you felt anxious in a waiting room? The link between a connection to nature and improved healing has been considered for centuries but has been substantiated in contemporary culture only since the mid-1980s. Surgical patients with a view to nature rather than a brick wall require less pain medication and recovery time. Nature-focused art and photography offer similar support.

For healthcare facilities to evolve into a synthesized ecosystem of wellness, we need to turn our attention to the

Patients with a view to nature require less pain medication and recovery time.

corner of the property, but the most powerful moment came a month later when school was back in session and we celebrated the ribbon cutting. Seeing children run up the ramp they had built, play in and around the bridge, and dig in the raised planting beds showed the students the full impact their work could have.

This understanding of impact is the real legacy of the Rural Studio. Born out of its DNA, the name “design/build studio” doesn’t fully capture its most important lesson. By creating even a small thing in a place that otherwise might not have that kind of thoughtfulness, students are given a window into the potential of what architecture can do. There’s both a power and a humility embedded in that. ■

PHOTOS

Trellis (left) and garden shed (above) for the outdoor learning center at the Dennis C. Haley school in Roslindale, designed and constructed by the Community/Build Studio at MassArt in summer 2011. Photos: Peter Vanderwarker

interstitial spaces to support the well-being of patients, families, and medical teams.

To create a landscape masterplan, Brigham and Women’s Hospital assembled an interdisciplinary team of landscape architects, wayfinding specialists, and architects, but a eureka moment came later, when Rosalyn Cama joined the group. The president and founding partner of CAMA Inc, a Connecticut-based design lab and studio, suggested a fresh way to package the landscape masterplan that the group developed. The team viewed every square foot of the campus as an opportunity, regardless of how small the spaces were; the idea was that the →

SAM BATCHELOR AIA, a partner at designLAB architects, founded and directs the MassArt Community/Build Studio.



→ aggregation of moments would create impact for visitors to the hospital. She aptly observed that the team was focusing on the “times between”—between parking the car and reaching the doctor’s office, between having a medical test and waiting for the results, between watching loved ones be wheeled into surgery and seeing them in the recovery room.

Hospital settings have their share of “times between.” The interstitial spaces where they occur are as important as the spaces specifically designed for

direct patient care; if healthcare facilities accept this as a basic tenet, they can make the transition from being a series of isolated places to an integrated healing network. CAMA Inc worked with Smilow Cancer Hospital at Yale-New Haven on a curated show of revolving nature images, shown on various media in hallways and waiting areas. One woman was so comforted by having a painting of a salt marsh to look at that she tracked down the artist so she could share how getting lost in the beauty of the image decreased her

anxiety over her husband’s surgery.

At the Brigham, the largest place for a “time between” experience is its cafeteria. Like a dystopian aboveground submarine, its few windows were too high and too small. The menu was not particularly supportive of good health, featuring fried foods and limited choices. The surroundings were grim; it was not a place to feel nourished in any sense of the word.

Options from all points of view—landscape, architecture, engineering, interiors, and wayfinding—were pulled together. To access views to gardens, the team constructed new grounds and worked out a plan that maximized the connection for cafeteria patrons. The garden was split into two parts, with the cafeteria expansion piece pushed between the two green spaces, resulting in two sides of each garden having a glazed connection to the interior space. Low two-top tables now line the edges for close-up views of the small-scale quilt of ground covers in the verdant shade gardens; further away, high-top banquette seating allows for views to the taller, ever-changing seasonal displays of woody plants.

Open only last year, the project continues to receive praise from the Brigham community and people associated with neighboring hospitals who also frequent the space. Going to the cafeteria is now the new healthy way to spend “time between.” ■

KAKI MARTIN ASLA is a founding principal at Klopfer Martin Design Group.

ABOVE

The Garden Café at Brigham and Women’s Hospital, a renovation and addition by Bruner/Cott & Associates and Klopfer Martin Design Group. Portions of exterior walls were removed, allowing light in and providing views to the outdoors. Photo: Kaki Martin ASLA/Klopfer Martin Design Group

THE ROAD AHEAD

by David Dixon FAIA

A new and disruptive technology is close enough to touch. Autonomous vehicles will be mass produced in two years and in widespread use within five. While this will surely mean more self-driving Teslas, for at least the first decade the real disruption will come in the form of shared autonomous vehicles (SAVs)—five- to 10-passenger electric vehicles that can run on schedule or be called on demand via smartphones. Thanks to not having to pay a driver, SAVs will cost half of what shared services cost today.

Autonomous transit will not be an equal-opportunity disruptor. These vehicles won't be built to speed along highways but instead to travel through dense urban environments (cities but also compact "urban villages" in the suburbs) where a concentration of people and a diversity of activity generate lots of trips. Here, SAVs will outcompete private cars on the basis of cost, convenience, flexibility, sustainability—and never having to park. "Urban" will increasingly signify places where vehicles are shared, not owned. In most suburbs, this process will take longer.

New mobility technologies have always had a transformational impact. The rise of universal car ownership drained vitality from cities for four decades. The rise of autonomous transit can have the opposite effect, unlocking opportunities for urban places to grow simultaneously denser, more livable, and greener. As one of my Stantec colleagues who is managing a test program for these vehicles in California has put it, the SAV is "the ultimate mobile device."

We could begin to see benefits early on, but we have to start planning now. Today cities host up to eight times as many parking spaces as they do cars. But SAVs drop people off. All these parking spaces take up scarce urban land and push up costs—adding \$50,000–\$100,000 or more to the development

cost of a condominium or 1,000 square feet of office space in Boston. Replacing a significant number of owned vehicles with shared ones will ultimately support new development. Think market-rate and affordable housing, research and innovation space, and other welcome investments.

Autonomous transit will bring density another boost. Public transit authorities are already looking at SAV services to provide critical "last mile" access, connecting people who live more than a 10-minute walk to the nearest transit station. These services will make transit more convenient and enable more distant sites to command the value premiums that transit-oriented development brings.

Planned poorly, this density could mean crowding. Planned well, it will enhance livability and economic opportunity. More households and workers will bring Main Streets to life and jobs to neighborhoods. More investment will produce fiscal benefits to support education, parks, and health. Downtown, improved mobility will attract knowledge workers and the companies that follow them. Citywide, newly obsolescent surface parking lots will become sites for affordable housing, schools, health centers, and other building blocks of livability.

Within a decade, SAVs will unlock unimagined opportunities to green our cities. Redeveloping acres of impermeable parking lots will reduce groundwater pollution. Shared trips will mean reduced emissions. Automated vehicles—shared or not—can travel within inches of one another, requiring far less pavement for vehicles. The resulting opportunity to repurpose one-third to one-half of our existing street pavement will offer a historic opportunity to redefine the fit between urban and nature. Instead of a car in every garage, every street can host a rain garden. Major boulevards will become continuous ribbons of urban trees coursing through the city.

Before we finish painting this picture of urban renaissance, we need to hit pause. Are we planning a next generation of urban development that will be outmoded from day one? Will SAVs exacerbate gentrification, reinforcing trends that have led to an increase in suburban poverty of more than 60 percent since 2000,

according to the Brookings Institution? Should SAV services be operated by private companies or as extensions of public transit, with corresponding public accountability? These are only some of the most obvious questions. The first step should be an in-depth conversation that draws together people from every neighborhood and livelihood.

We need to start planning now to anticipate the revolution that's just around the corner. ■

DAVID DIXON FAIA leads Stantec's Urban Places Group.

LEFT

Olli, a 3-D printed 12-passenger self-driving vehicle, analyzes and learns transportation data, integrating IBM Watson's computing capabilities. Image: Courtesy Local Motors





All photo works
by Daniel Everett

ABOVE
*Untitled (from
Marker), 2016*

RIGHT
Untitled, 2016

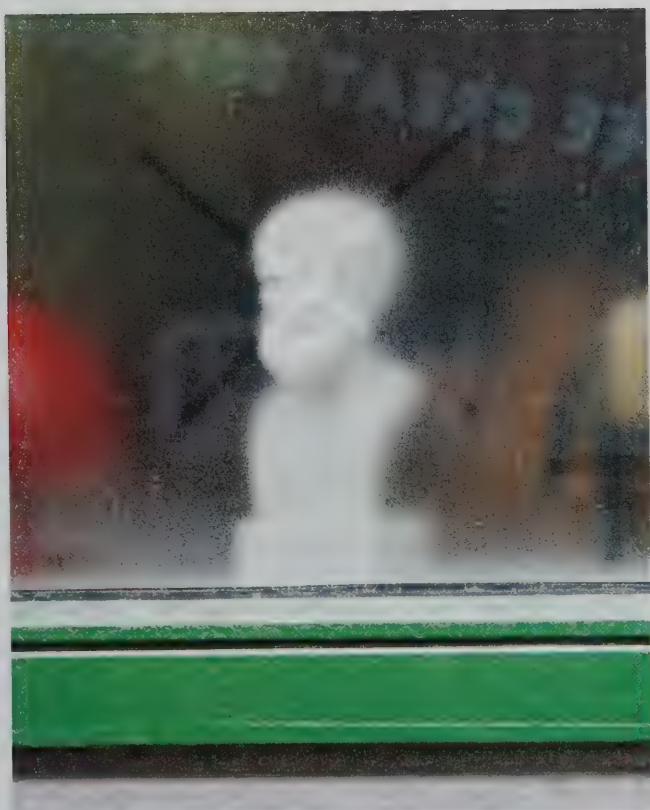
EVIDENCE AND DETRITUS

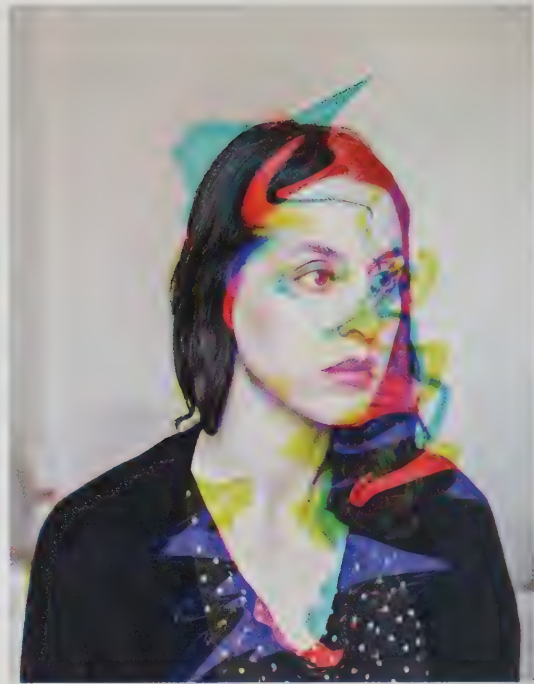
Daniel Everett has a complicated relationship with progress. Though he is drawn to the utopian promises of Modernism, he's also acutely aware of how empty perfection can be. His work both celebrates and negates order and harmony.

Trained as a photographer but equally fluent in sculpture and video, Everett uses the architecture of cities—including new construction and buildings under renovation—as raw material. The drywall markings or shards of brightly colored cement that once indicated excavation sites are evidence of repair, which is itself a drive for perfection. “It’s about the aesthetics of progress against the mundanity of objects left in the wake of progress,” he says.

His process of discovery is that of the old-fashioned flâneur: he has walked thousands of miles along the perimeter of cities or limned its subway tracks, “going around without a plan and just reacting to the space.” As he rambles, he finds a city’s organizational grid alluring and oppressive in equal measure.

—Renée Loth





ABOVE
Untitled (from
*Throughout
 the Universe in
 Perpetuity*), 2015

TOP RIGHT
Michele, 2012

OPPOSITE
Untitled (from
*Throughout
 the Universe in
 Perpetuity*), 2013





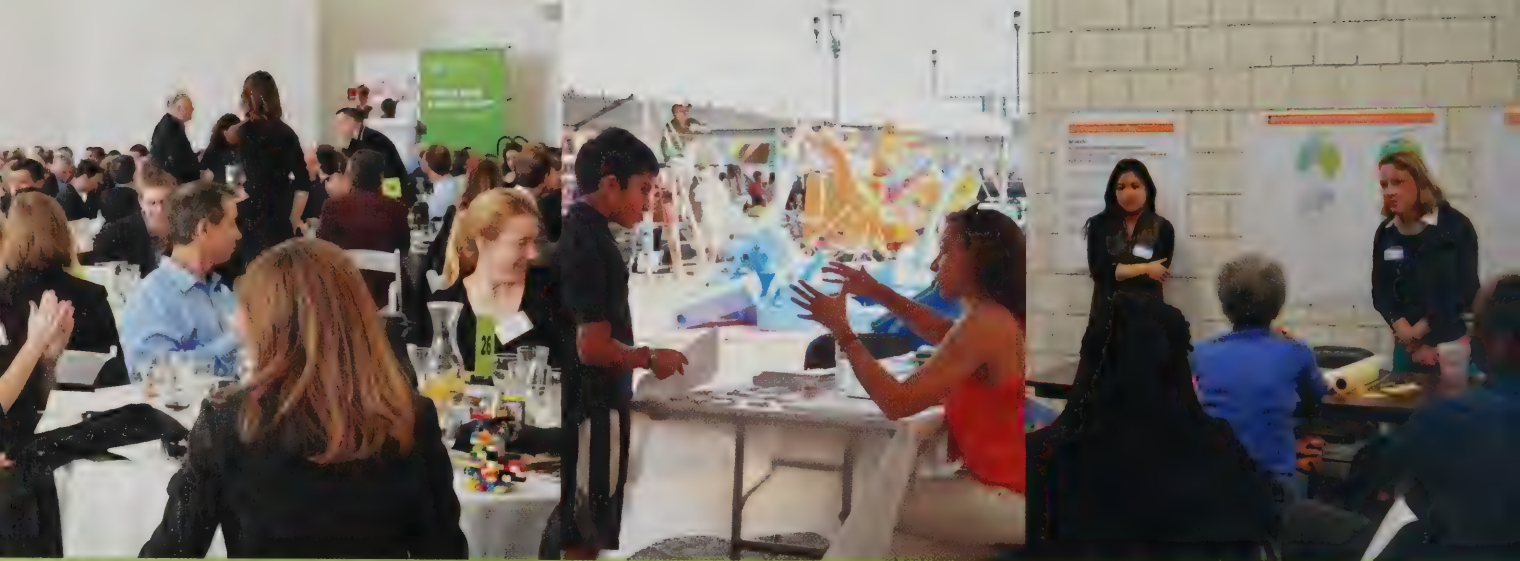


OPPOSITE
*Untitled (from
 Throughout
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RIGHT
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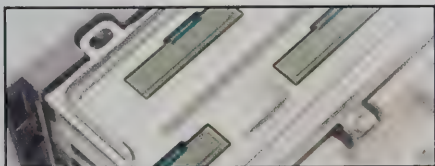


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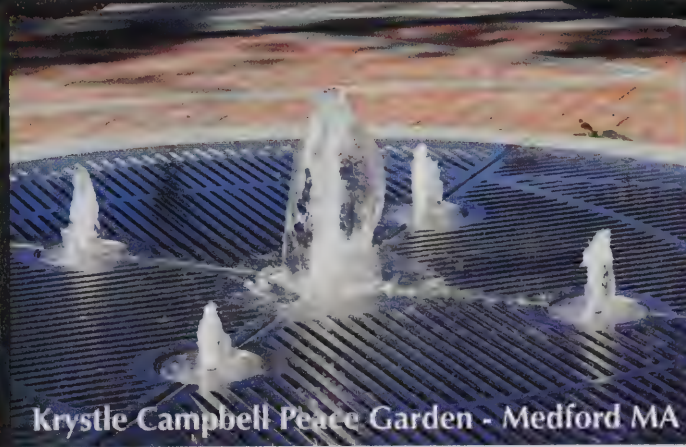
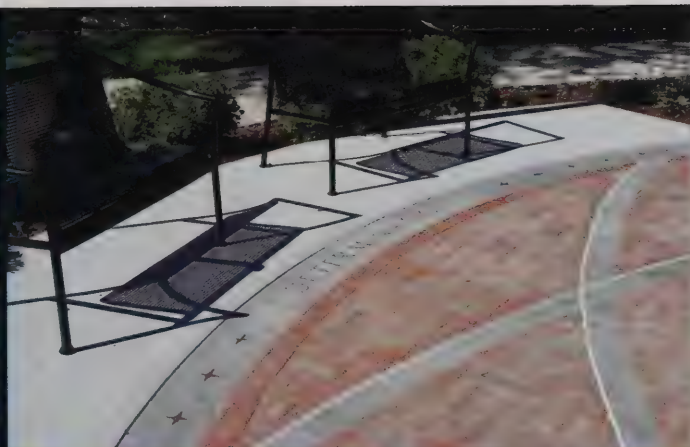
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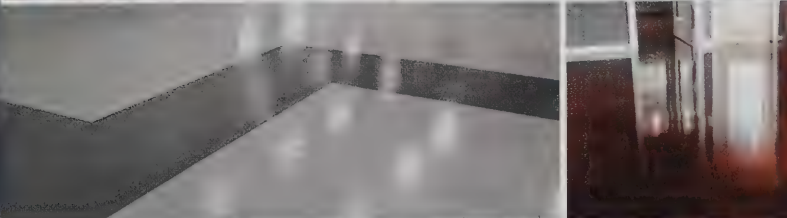
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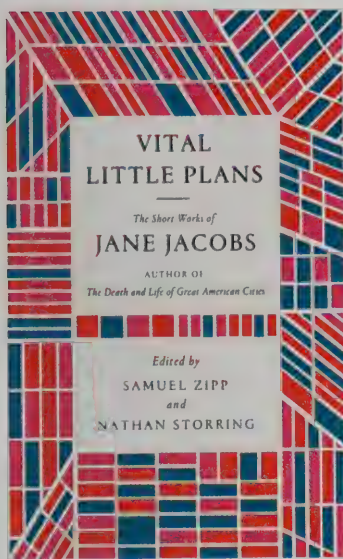
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BOOKS

**Vital Little Plans:****The Short Works of Jane Jacobs**

Samuel Zipp and Nathan Storning, editors

Random House, 2016

Reviewed by Ian Baldwin

In 1864, George Perkins Marsh, a Vermonter serving as the ambassador to Italy, published *Man and Nature*. Its novel thesis was that human activity was inherently destructive to the environment. Marsh argued for active safeguarding of resources for future generations; a century later, *Silent Spring*, the Clean Air Act, and Earth Day marked the mainstreaming of environmentalism.

Urbanism's equivalent to Marsh must date from Jane Jacobs' landmark study *The Death and Life of Great American Cities* in 1961. If so, we're a bit over the halfway mark between her landmark study and the hopeful day when society at large acknowledges the necessity of an urban future. No better time, then, for *Vital Little Plans*, fresh and compelling reportage from Jacobs' life and work outside that famous book.

Death and Life was a self-described "attack on current city planning and rebuilding" (and a brave declaration for an author whose day job was editing *Architectural Forum*). Its keen record of life in Greenwich Village showed how streets, stoops, shops, and sidewalks,

imagined as a site of immigrant and bohemian otherness, were instead well-oiled parts of a machine spinning normalcy and economic vitality out of a crowd of strangers.

After its publication, Jacobs and many other activists continued to fight the city's plans to drive new roadways through the Village, a complicated dance reduced in retrospect to a Jacobs-versus-Moses title bout. But she left New York City in 1969 for Toronto, when her draft-age sons announced their intent to go to jail rather than join the fight in Vietnam.

Well before her 2006 death, a Jacobs cult formed around the ever-relevant *Death and Life*, trapped beneath the amber coating laid down by hundreds of articles, exhibitions, and books. (Two new biographies this year finally pushed the number of books about Jane Jacobs past those by her.) Her post-*Death and Life* writing evolved well beyond micropolitan study; in seven books she trained her intellect on the political, moral, and economic systems that had always underlaid her urban explorations. *Vital Little Plans* is the first anthology of Jacobs' short works and a most useful tour of her thinking throughout her career.

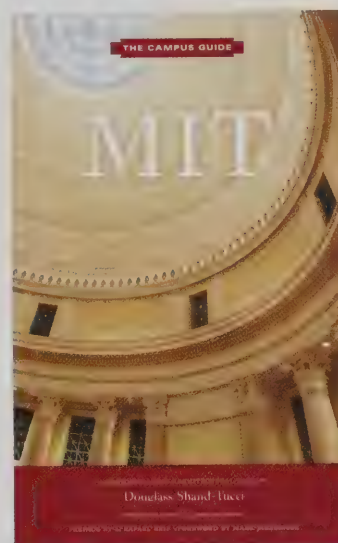
Its contents range from 1930s pieces for *Vogue*, which see Jacobs pounding the pavement of Manhattan's floral and jewelry districts, to a 2004 speech positing the end of a "Plantation Age." From arriving in Depression-era New York at age 18 to work odd jobs and catch the odd byline to an endowed lecture at the city's leading public university, was a run of remarkable success and length, but as *Vital Little Plans* reveals, it was always powered by the same hard-charging, unconventional intellect. Jacobs didn't want to impose her ideas on others. She wanted to find the answers to some very basic questions about how and why cities and economies work.

Editors Samuel Zipp and Nathan Storning could not be better suited. Zipp's *Manhattan Projects* delved into the midcentury urban renewal that forged Jacobs, and Storning's hometown

knowledge of Toronto fleshes out battles against expressways and amalgamation in the city where Jacobs spent half her life. Their textual interventions are frequent but erudite.

Again and again, the book shows Jacobs' fearlessness, her ability to wield a prose shotgun of counterintuition to cut down conventional absurdity. She was never a radical yet gives no quarter. This might be the problem Jacobs poses to contemporary urban design, whose studios always feature Jacobs on the reading list but never on the boards. Her view of the city as a gradual and granular process is compelling, but hard to realize in the face of regulatory regimes and real-estate economics. Reading *Vital Little Plans*, we can at least nod our heads and cast our minds to 2061, thinking, "What would Jane do?"

IAN BALDWIN is a partner at DUAL, an architecture practice based in Providence, Rhode Island.

**MIT: The Campus Guide**

Douglass Shand-Tucci

Princeton Architectural Press, 2016

Reviewed by David Fixler FAIA

The reader who expects short descriptions and scripted walks in this architectural guide is in for a surprise: What Douglass Shand-Tucci has done is frame the

history and architecture of the Massachusetts Institute of Technology as an apotheosis—and an affirmation, to his way of thinking—of the Boston Brahmin culture that undergirds its beginnings and persists in subtle ways to this day.

The guide is structured first as a series of “portals” themed to Boston’s artistic and intellectual life, followed by a number of walks. Almost half is devoted to the history and atmosphere that surrounded MIT founder William Barton Rogers, who set about building an institution that would “overtop all the universities of the land” with its unique mix of hands-on technical learning coupled with a grounding in the liberal arts. The author describes the culture and early history of MIT as part of an ensemble of institutions birthed in the crucible of the newly reclaimed land around Copley Square. This “Acropolis of the New World,” as it was dubbed by Bostonians in the late-19th century, is to Shand-Tucci both the font and the physical and intellectual heart of American modernity: institutions envisioned and built by a culture that represented a progressive, intellectually entrepreneurial view of America in the world.

The story of MIT’s move to Cambridge in the early-20th century is well told. William Welles Bosworth’s Main Group, a Neoclassical “Great White City on the Charles,” is also themed as extending a Brahmin ethos manifested in the austere simplicity of the Boston Granite Style, which becomes more overtly Greek in the architecture of Harvard Medical School and the Museum of Fine Arts—both institutions that originally shared Copley Square with MIT. The planning work of John Ripley Freeman—an engineer who adhered to the latest models of workplace efficiency advanced by Frederick Winslow Taylor—was then turned by Bosworth into a sublime work of architecture.

The Main Group anchors an ensemble that, indeed, is unlike that at any other university on the planet, and though the natural references are made to Thomas Jefferson’s University of Virginia,

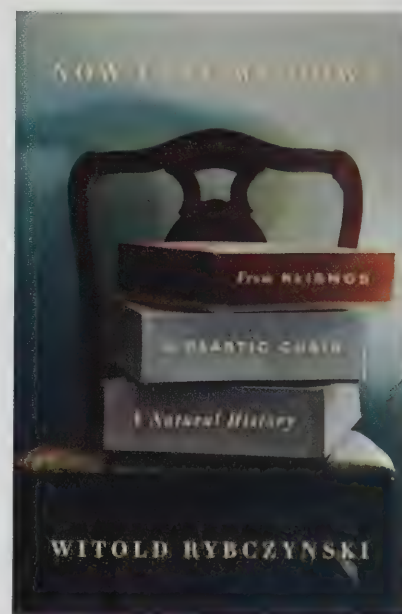
to me there is an almost humbling power in Bosworth’s design that is most analogous to the visionary, severe—and explicitly sublime—projects of Étienne Louis Boullée; had he wished it, this might have been Boullée’s university.

MIT’s embrace of innovation extended to an enlightened patronage of Modern architecture in the immediate postwar era, when the West Campus was developed as a locus of student life and cultural activity. This began in 1946 with the hiring of Alvar Aalto to design Baker House and was followed closely by Eero Saarinen’s Kresge Auditorium and the MIT Chapel, creating, as Shand-Tucci rightly notes, an ensemble of three of the premier works of Modernism in America.

The importance of MIT’s architectural patronage becomes a major theme of the last walks of the guide, with an extended discourse on the legacy of I.M. Pei (four buildings), MIT’s “Grand Projects” undertaken between 1998 and 2004 that produced works by Charles Correa, Steven Holl, Frank Gehry, and Fumihiko Maki, and the extensive network of public art placed throughout the campus.

Shand-Tucci relentlessly returns to the Brahmin theme, which he posits in recent years extends to the likes of Pei and author Jhumpa Lahiri (who has featured MIT in her books), and to the outsized role that MIT, Harvard, and the research community largely spawned by these institutions have had in the arc of the history of Modern architecture and of the Modern world. There are some notable omissions—such as the works of Skidmore, Owings & Merrill—but he is a lively and engaging author, and if one is willing to accept his thesis and to allow for some minor errors of fact (or perhaps stretching of truths), it makes for an informative and entertaining read.

DAVID FIXLER FAIA is a principal at EYP Architecture & Engineering. He has worked on projects rehabilitating the architectural heritage of MIT for more than 20 years.



Now I Sit Me Down: From Klismos to Plastic Chair: A Natural History

Witold Rybczynski

Farrar, Straus and Giroux, 2016

Reviewed by Galen Cranz

Now I Sit Me Down is for connoisseurs—those who like to know things rather than think critically about them. Witold Rybczynski shares his knowledge of the history of chairs, organized thematically rather than chronologically, in an amiable and inviting way. He has convincingly demonstrated in the case of the chair—as in his other books on design—how material objects manifest a web of practical, social, artistic, and business activities. But if you are interested in the idea that “sitting is the new smoking,” this is not your book.

Rybczynski takes a natural history approach, usually saved for topics in which no theory yet exists. He downplays theses that chairs historically served primarily to differentiate social status and that the human body is harmed by prolonged chair sitting, even though he acknowledges that “status and sitting furniture are never far apart” and an epidemiological study linking chair sitting with premature mortality.

His approach leads readers to believe that no controversies exist regarding the material culture of chairs. On the

contrary. His social history of the chair overlooks one detail about the *triclinium*: the three-sided banquet couch was for men only initially, but later its use changed to include women. Further, in his chapter on side chairs, Rybczynski misses the genius of the choir stall, about which he discusses only its boxy shape. The seat of those stalls is on a hinge; when flipped up, its specially carved underside serves as a perch, halfway between sitting and standing, identical to what NASA calls “neutral body posture.” Most important, several behavior researchers have demonstrated that long hours of sitting increases the risk of back pain, heart attack, stroke, and cancer.

Rybczynski does not embrace the idea that physiological well-being could be the basis for chair analysis and evaluation, even though in earlier writing he points out that comfort is a value missing from architectural

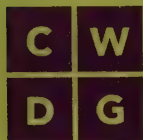
education. His definition shifts, but, like most contemporaries, he assumes comfort means something like yielding ease rather than structural alignment or strengthening. He also assumes that a stool must be uncomfortable to use for any length of time because it has no back. (My own research, outlined in *The Chair*, demonstrates that using chair backs is precisely what has weakened our core muscles to the point that we need back support.) When one does not want to rethink the effects on the body of what the scholar Wayne Constantineau described as the impotence of the seated posture—neither standing and ready for action nor reclined for restoration—then one incorrectly assumes that earlier peoples who walked, rode horses, and squatted shared our culturally induced weaknesses.

Rybczynski acknowledges the intrinsic difficulties of postures midway

between standing up and lying down—a subtle, implicit argument that the chair is not to blame; rather, it’s the interplay between gravity and the human body. Gravity is the field within which humans evolved, and astronauts in outer space suffer without it, so gravity is not the problem; how we design—or fail to design—with it remains a test of our collective/cultural design intelligence.

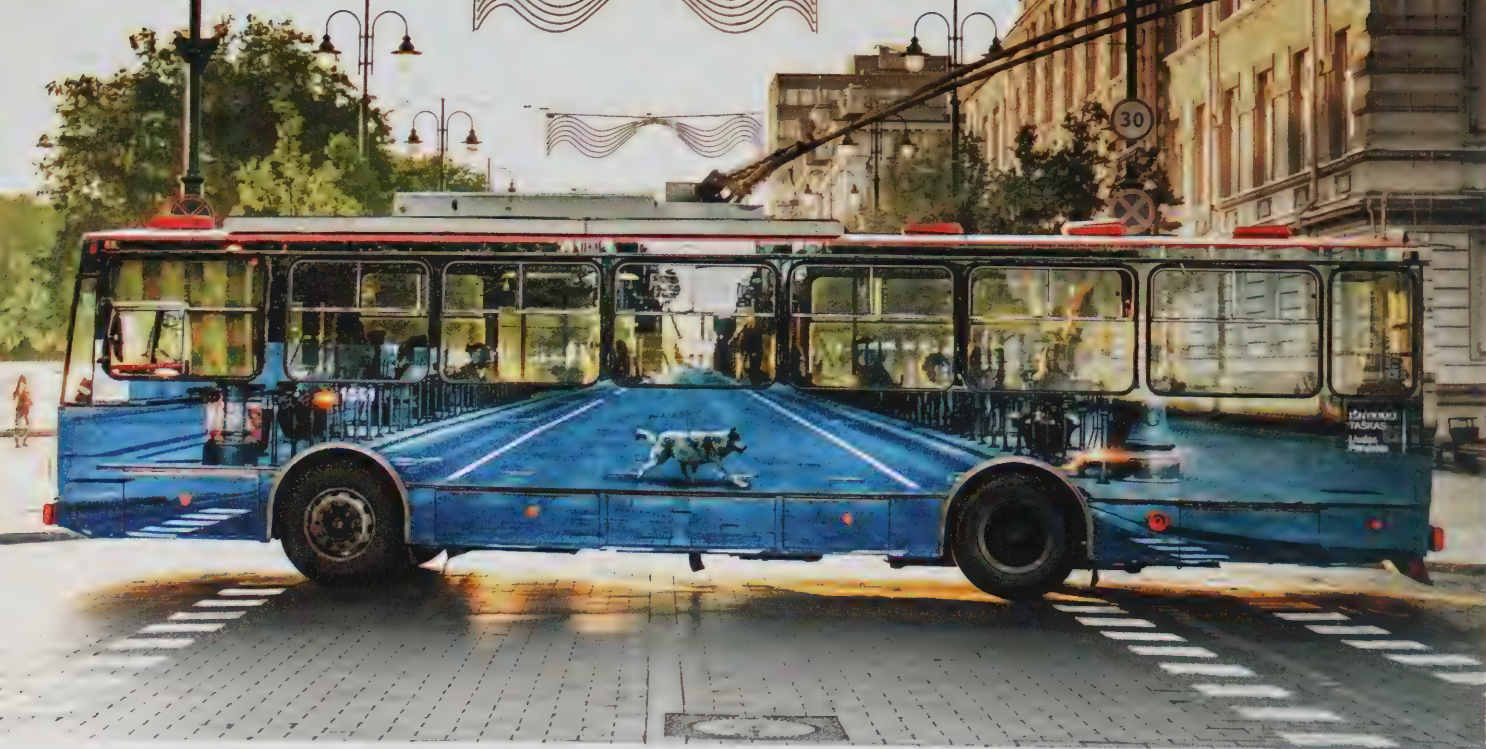
Aside from these points regarding historical details and body consciousness, Rybczynski’s general themes and attitudes are well founded: Chairs are as much about behavior as about artifacts; the chair is not natural; and it is both a practical tool *and* a work of art.

GALEN CRANZ, a professor of architecture at the University of California at Berkeley, is the author of *The Chair: Rethinking Culture, Body, and Design*.



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A ROAD TO SOMEWHERE

by Monica G. Tibbits-Nutt

In the course of my career, I have been asked many times why I became a transportation planner. And I've given all sorts of answers. I love SimCity. I want to transform my built environment. But, until this past election season, I have never really pushed myself to answer honestly.

I'm from an extremely rural community in the Midwest. Where I come from, most people don't go to college. Some finish high school. (My father did not.) Most people work in factories (including my mom and my dad). To say that it's not a very diverse place would be an understatement.

It was profoundly important to my mom that I get a good education. I could have traveled just 15 minutes to the local school but would have walked through metal detectors to get to class. Instead, my mom put me on a bus for more than an hour every morning to reach a beautiful campus with all the books I could read and teachers who really wanted to teach—and who were given the resources they needed to do so.

Not everything about this choice was idyllic, though. I got on the bus before the sun came up and was bullied as the wheels went round and round for having the wrong hair and the wrong clothes. (You can't buy the "right" clothes at Goodwill.) When I got off the bus my very first day, one kid met me with a hateful racial slur. I didn't know what it meant, beyond the fact that I was different. On the ride home, I would sometimes see the Ku Klux Klan handing out fliers to passing motorists. Despite everything, my mom kept putting me on that bus.

I rode the bus to school for 10 years. Now I know that someone planned its route very intentionally. Some transportation planner designed that bus route, hoping to reach kids who otherwise left school after eighth grade to work on farms or in factories. Some transportation planner hoped to change a few kids' lives.

Of course a bus can't fix everything. It can't keep kids from hearing things they shouldn't have to hear. (My chemistry teacher at parent-teacher conferences: "She's the dumbest student I've taught in 40 years of teaching." My advanced English teacher, while discussing *Fantastic Voyage*: "Guys, how do you know that the nurse is black? Because she's picking cotton out of the patient's ear.")

But that bus did change my life. It gave me access to resources, books, and lectures otherwise reserved for much wealthier students. It put me on the road—literally—to becoming the first in my family to attend college and then graduate school. That bus gave me a route out.

Good transportation design is about access—to better educational and employment opportunities, to a better life. As transportation planners, we have the power to open up whole new worlds to our communities, even if we can't make those worlds as kind or just as our communities deserve.

We can argue about different cost-savings approaches, competing definitions of innovation, or our various politicized projects, but we cannot forget that we are in the business of access. Now, more than ever, we have to hold ourselves accountable to the lofty goal of fighting for equity of access. The communities on whose behalf we work need to hold us accountable. I hope it's why we do this. It's definitely why I do. ■

MONICA G. TIBBITS-NUTT is a transportation planner and urban designer.

ABOVE

Vanishing Trolley, Liudas Parulskis, 2016
Vilnius Street Art Festival, Vilnius, Lithuania
Photo: Ronaldas Buozis/Studio Vieta



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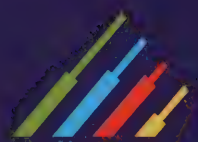
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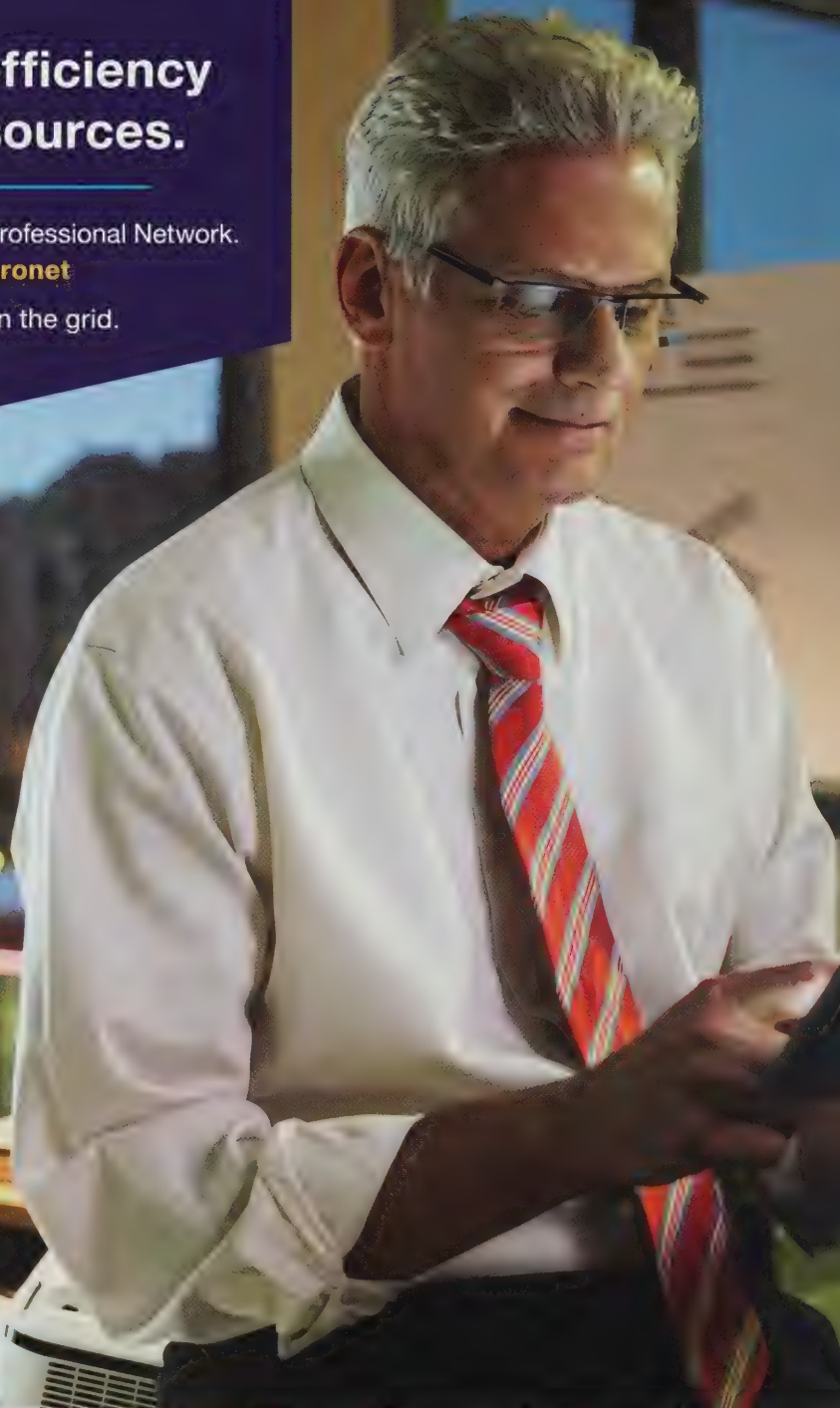
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Chocolatexture, for *Maison et Objet*, by Nendo, 2015. The nine chocolates are made with identical raw materials, but distinctive textures create different tastes. Photo: Akihiro Yoshida

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Harrods Jelly, Bompas & Parr, 2016. From *Jelly Parlour of Wonders*, an installation in Harrods Food Hall, London. Photo: Courtesy Bompas & Parr



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...BUT I KNOW WHAT I LIKE

They scoffed at the Eiffel Tower, calling it “useless and monstrous.” They disdained the Guggenheim museum as “an oversized and indigestible hot cross bun.” They mocked the Villa Savoye, calling it “a box on stilts.” So why should we be surprised when critics deride London’s Shard or find Boston City Hall a plague on the eyes?

In the examples above, “they” were mostly established arbiters of good taste, worthies like Guy de Maupassant or the editorial board of *The New York Times*. But you don’t need a pedigree to pass judgment. There’s a long history of scorching architectural criticism—a comforting reminder that many of our most beloved buildings hardly started out that way. The Pyramids of Giza were no doubt denounced in their time as monumentally out of scale and disappointingly opaque.

What is beauty; who decides? This issue of *ArchitectureBoston* wades right in to these contentious questions, not so much to locate answers as to find a language to discuss them. By definition, taste is personal and subjective; we like something or not “as a matter of taste.” Others argue that quality can be defined by certain universal, objective criteria, whether it be proportion, integrity, or balance. The debate is as old as Vitruvius and as contemporary as Koolhaas.

In our democratic—not to say populist—times, we grow squeamish about suggesting that some things are better than others, that everyone is entitled to their own opinion, but not all opinions are equal. Discussions of taste veer uncomfortably close to its cousin, class, which is still the great American taboo.

But we must not shy away from confrontations with beauty, says Harvard professor and author Elaine Scarry. In her conversation with Mark Pasnik AIA on page 30, she makes a strong case for rescuing beauty from its exile precisely because its power takes us out of ourselves, enabling us to relate to the suffering of others. For Scarry, beauty is a verb, driving us to take moral action.

Even purists can’t escape the fact that tastes change over time, affected by external conditions from culture to technology. Can a building be truly tasteful today if it isn’t energy-efficient or accessible? The advent of plate glass or the computer-generated curves of Bilbao introduced new building materials and techniques unimagined in Plato’s time; we adjust our notions of taste along the way.

Then there’s the performance of a building: how it acts upon the visitor. One of the laudable aspects of the Harleston Parker Medal—conferred by the Boston Society of Architects/AIA since the 1920s—is that its jury doesn’t simply look at photos but visits the building finalists in person (see “In an extraordinary space” by three-time juror Christina E. Crawford). Such a practice is good defense against the sly secret most architects know: Any building photographed at dusk looks more beautiful!

When we think about taste, our fancy turns to food—and drink. The trade journal *Food Quality and Preference* recently conducted an experiment that pit wine experts against mere enthusiasts, each group tasting 27 different Cabernets. The results were predictable: The average drinkers preferred sweeter wines that were lower in astringency and complexity—the very opposite of the quaffs hailed by the cognoscenti. Sound familiar?

Herein may be a way out of the conflict between populism and elitism. A trained eye may be able to find beauty in Brutalism, just as a cultured palate can appreciate more complex wines. It’s not “educating” the public that’s needed but a sincere curiosity and openness to opinions on both sides of the aesthetic divide. Saint Augustine said that beauty “is a plank against the waves of the sea.” Respectful conversation is the life raft we need today. ■

Renée Loth
Editor



Photo: Ben Gebro

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ON “EUREKA!” (SPRING 2017)

I had the pleasure of reading the Eureka! issue in one sitting on a quiet March morning. I was struck by how much the yearning of designers to use their problem-solving skills to heal the world has become an ache in our current political climate. Being a wonk at heart, I find this raises a policy issue: How can so many of the great ideas featured in the issue—from Brooklyn Bridge Park (“A plan takes root”) and Somerville’s 100 Homes Initiative (“Home for good”) to the outdoor learning center at the Haley School in Roslindale (“A measure of impact”)—turn one-off wonders into broad policy solutions? Then I had my own eureka moment: Architects just need clients with the capacity to solve big problems.

We’ve spent most of the past 40 years hobbling government, and it’s not getting better. Nonprofits tend to strain from project to project. Maybe it’s time to empower nimble, entrepreneurial public-private partnerships to address long-term challenges. How about a regional climate-resilience conservancy that captures revenue from waterfront development and garners public funding and philanthropy to build and maintain coastal protection that doubles as an open-space amenity? How about a conservancy that builds and maintains a regional network of multiuse greenways that provide a safe, convenient way to navigate without a car? We could use one for middle-income housing and another one for cultural facilities.

This will probably take some time to accomplish. We should start soon.

MATTHEW KIEFER

Attorney, Goulston and Storrs
Boston

I read with interest the piece “Tonics and provocations” in your Eureka! issue. It is thrilling for us at the National

Endowment for the Arts (NEA) to see you cover the community development and empowerment work featured in Cynthia Smith’s *By the People* show at the Cooper Hewitt Smithsonian Design Museum and to read the other articles that interrogate the issues that occur when designers work on the complexities that surround improving American communities.

In recent years, the NEA has been working hard to support this type of work, whether it be called social-impact design, community-engaged design, or creative placemaking. We’ve done that through national convenings, webinars, and grants to nonprofits such as Kounkuey Design Initiative, BC Workshop, Tiny WPA, Project H, Epicenter, and many more.

I urge your readers to look at the materials we’ve gathered on our “Designing Equity” web page at arts.gov to learn more about the depth of conversation occurring around this work, especially on the future needs of the architectural practice. From our national platform, we have the honor of seeing the vast array of ways in which designers are engaging communities and hope that others will join us in supporting and discussing this work.

JASON SCHUPBACH

Director of Design and Creative
Placemaking Programs
National Endowment for the Arts
Washington, DC

(Note: In July, Schupbach begins a new job as director of the Design School at the Herberger Institute for Design and the Arts at Arizona State University.)

Designing for social justice has become the soup du jour in our profession. One can argue that few, if any, projects should be taken seriously without at least an expressed intent to respond to the needs of our most vulnerable populations—those who are subject to



oppression and injustice of any kind. That design for social justice is at the forefront of our conversations and our work is a wonderful thing, but it reminds me of how much sustainable design and “green buildings” were in that position just a few years ago. How do we keep these initiatives from merely being buzzwords? How do we ensure that we are, indeed, designing for social justice and not just applying the rhetoric for aesthetics and accolades?

In “Tonics and provocations,” Cynthia Smith states that “communities are learning to recognize and value existing assets in both the natural and built environments that have long been overlooked.” The first real step toward designing for social justice is allowing the disenfranchised the opportunity to see the value in their communities and, most important, in themselves, then allowing them to take over the design process.

This leads to the capacity to envision and fulfill their own dreams and destinies. If you’ve been overlooked for most of your life, the best gift someone can give you is the realization that you are seen and you are heard—and the space and freedom for that newfound agency to bloom and grow. Anything short of that would simply maintain the status quo. It’s not “public participation for public participation’s sake”: design for social justice is an intentional and iterative pooling of public input and ideas from which design can give form.

WENDELL T. JOSEPH

Neighborhood planner
Community Development Department
City of Cambridge

As a recent design school graduate,

I identified with “Toward an ideal,” the essay by Justin Crane AIA. There is a stark difference between the mentality you encounter in school and the mentality you encounter in a firm. Research and innovation are driven in the academic realm and then slowly, over time, picked up in business practices. I’ve been fortunate to have opportunities to explore how this manifests in practice, predominantly in the form of virtual reality, but was caught off guard by how much I would have to sell the idea and how clear a picture I would need to paint of how VR can be used.

The first question I always get is: Does it make sense for the business? I’m learning, over time, how to relate every experience back to the value it can add to the firm. Sometimes, though, it’s frustrating to have to spin everything when I believe in experimentation for the sake of discovery. Call me a post-rationalist. I’m at an early stage of my career yet still close to the academic mindset, and I struggle with what it feels like to be stuck between these two competing thresholds.

Academia drives innovation, but practitioners build the world we inhabit. To echo Crane’s point, one can’t live without the other. As a scholar, I have to appreciate the need for an investment that adds more value than it costs. As a practitioner, I must stay open-minded to innovations that might change the way I practice. There’s an important balance between the idealism of academia and the bottom line of business. Both mediums have opportunities to learn from each other.

ANGELINE FOCHT

*Architecture, Shepley Bulfinch
Boston*

The focus throughout the Eureka! issue on design’s innate impact—naturally solutions-based and more often than not changing our future in positive ways—created many pause-and-reflect moments

for me. Each essay showcased a snapshot of design’s impact; in total, we are left with an infinite understanding of the depth and breadth of this impact.

In the pause, we see exactly what design is reflecting to us today. Sam Batchelor AIA shows a thoughtful example of how a seed planted decades ago continues to grow a mini-forest of ideas and practices. I see how Sam Mockbee and Steve Badanes’ architectural activism and community-build theories influence even small integration efforts in my hometown of Providence, Rhode Island.

The essay by Kaki Martin ASLA on well-designed healing spaces shows how a comprehensive design for the medical environment complements the field in a small but powerful way. Although society is acutely aware of diseases and other health problems, we haven’t historically connected our environments to healing or even health in general; CAMA’s work is changing that.

What designers do today is often simple and even perhaps obvious, yet their thoughtful efforts will help human interaction evolve in the future. This is why I cofounded DESIGNXRI, a nonprofit economic development organization for the design sector in Rhode Island. I’m not a designer, but rather someone who has always recognized the impact of the creative, problem-solving process that designers bring to my world.

At DESIGNXRI, we work to activate the designers’ impact. Although our work focuses on attracting commerce and business development to design, its ultimate purpose is to help design to continue to shape our world. Thank you for giving me the time to pause, reflect, and celebrate, again, the influence the design field is making every day.

LISA CARNEVALE

*Cofounder and executive director,
DESIGNXRI
Providence, Rhode Island*

EDITOR

Renée Loth · rloth@architects.org

DEPUTY EDITOR

Fiona Luis · fluis@architects.org

CONTRIBUTING PHOTOGRAPHERS

Steve Rosenthal, Peter Vanderwarker

CONTRIBUTING EDITORS

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IN THIS ISSUE



Photo: Kristin Caulfield

Christina E. Crawford ("In an extraordinary space," page 20) is a historian of architecture and urban form, a licensed architect, and an urban designer who researches and writes about the agency of design during periods of intense transition. She is assistant professor of modern and contemporary architecture in the art history department at Emory University.



Photo: Hannah Goff Spicher

Michael R. Spicher ("Upon the rising stars," page 24) is a writer, editor, and philosopher based in Boston. He has researched, published, and spoken about the history and philosophy of beauty and taste for more than a decade. He is an editor for the *Leonardo Electronic Almanac*, published by MIT Press.

Elaine Scarry and Mark Pasnik AIA ("Beauty is a beast," page 30)



Photo: Renée Loth

Elaine Scarry is the Cabot Professor of Aesthetics at Harvard University. In addition to her recent book on Shakespeare's sonnets, she is the author of *The Body in Pain* and *On Beauty and Being Just*.

Mark Pasnik AIA is principal of over,under, a multidisciplinary design firm. He is a professor at Wentworth Institute of Technology and coauthor of *Heroic: Concrete Architecture and the New Boston*.



Photo: Courtesy of Henry Scollard AIA

Henry Scollard AIA ("An idyll to the King," page 26) is the founding principal of HANK, a full-service architecture and design firm, whose work includes a wide range of projects, from large-scale academic and cultural buildings to the commercial and hospitality sectors. He is currently working on Tourists, a destination hotel in North Adams, Massachusetts.

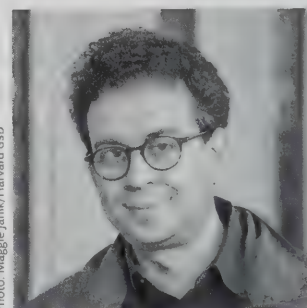


Photo: Maggie Janik/Harvard GSD

Mark Lamster ("Informed sources," page 40) is the architecture critic of *The Dallas Morning News* and a professor in the architecture school at the University of Texas at Arlington. He is the author of numerous books, including a forthcoming biography of the late architect Philip Johnson, to be published by Little, Brown.

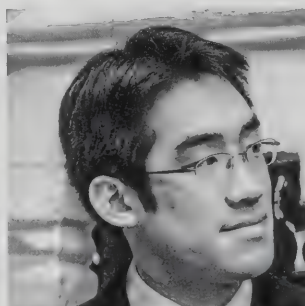


Photo: Triston Yeo

David Huang ("Eye of the beholder," page 56) is a senior associate at DP Architects, a multidisciplinary design practice in Singapore. For 14 years he lived in Boston, where he worked for TRO Jung|Brannen and Payette. He graduated from Cornell University in 2002 with a bachelor's degree in architecture.



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GENIUS LOCI

Ayala de Chinati

Finding our way through the scrub and down the hillside at Las Casas, Donald Judd's ranch in southwest Texas, our project team followed the rock bed as it bent first left, then right. The handprint was easy to overlook, but once found, its delicate improbability was breathtaking. Several hundred years old, it was outlined by ochre powder blown onto the underside of a rock ledge at the edge of the arroyo. Steps away, a smaller hand. Father-son? Husband-wife? A short climb back up and out of the arroyo, there was an equally improbable sight: the cool, quiet, cerebral elegance of Judd's "progression" sculptures hanging on a wall in a simple cabin in the heart of the high Chihuahuan Desert. The handprint and the sculpture. Two very different objects made with the same intention—an affirmation that someone once stood within this vast, timeless landscape.

A complicated man of simple, declarative works, Judd's influence has been acknowledged by everyone from Apple Computer to Álvaro Siza. To describe him as an artist is to dismiss the scope and scale of his interests. He was a prolific writer, known for his criticism before he became known for his art; a political activist; and one of the earliest advocates of preservation and adaptive reuse, first through his purchase and renovation of 101 Spring Street in New York City and then in a series of buildings and structures in Marfa, Texas. He was also keenly interested in preserving the land. At the time of his death in 1994, he owned more than 40,000 acres south of Marfa, and it was here, in the swath of property Judd called Ayala de Chinati, that he inhabited a series of cabins and spent as much time as he could in the remote forbiddingness of the high Chihuahuan Desert. His son, Flavin Judd, said that although people connect his father to Marfa, toward the end of his life the town was merely a stopover on his way to the remote desert: "If you really want to understand my father, you have to go to Las Casas."

The road from Marfa to the Las Casas ranch begins as a two-lane blacktop and soon diminishes in quality, the ruts at the

sides becoming the road itself until finally giving up any pretense of a road hard up against the Mexican border. Arriving at the ranch, the experience is of the endless view and the scrub at your feet. The near and the far, the vast and the intimate, are all enveloped in an otherworldly silence—a ridiculous, all-encompassing silence completely at odds with the scale of the land. This vastness should be defined by a deafening noise, but then again, is this vastness a solid or a void? At the center of the compound there is a corral, enclosed by a stone wall whose craftsmanship and precision rivals anything at Machu Picchu—its author an unknown ranch hand from long ago. Stepping inside the cabin, one leaves the uncontrollable landscape and enters an intimate, carefully curated landscape. The interiors reveal a defiant, obstinate, inquisitive homeowner making a stand against the vastness just outside the door: the carefully arranged kitchen utensils, the meticulously aligned furniture, the precisely ordered library, and the carefully hung "progression" sculptures. In his cabin as in his work, Donald Judd was seeking order in a seemingly disordered world.

He is buried in an unmarked grave on a small rise just beyond the cabin, his life arcing from his childhood in Excelsior Springs, Missouri, to the epicenter of the New York City art scene to the small West Texas town of Marfa and then up into the high desert. A progression of its own, from the measurable to the immeasurable.

BRYAN IRWIN AIA is a principal at Sasaki Associates in Watertown, Massachusetts. Sasaki is completing a master-plan for the Chinati Foundation, the museum Donald Judd founded in Marfa, Texas.

ABOVE

Chihuahuan Desert, Texas, 2014. Photo: Bob Plotkin

Lumia: Thomas Wilfred and the Art of Light

Yale University Art Gallery

New Haven, Connecticut

Through July 23

The ethereal works of Thomas Wilfred (1889–1968) were so original that he coined his own collective term for them: lumia. Wilfred's lumia—which manipulate light to project colorful, moving forms—have been compared to the aurora borealis. They once dazzled audiences, yet today this Danish-born artist, who came to the United States in 1916, is largely forgotten. This exhibition, which displays nearly half of the lumia Wilfred produced over his decades-long career, is the first retrospective of his work in more than 40 years.

The pieces range from small, intimate works to grand, cinematic pieces. His 1928 piece *Elliptical Prelude and Chalice* consists of a maple table that at intervals projects on the ceiling a mesmerizing swirl suggestive of the eye of a storm or an embryo dividing in utero. *Lumia Suite, Opus 158*, cosmic in scale and scheme, was commissioned by the Museum of Modern Art (MoMA) in 1963 and drew crowds before falling into disrepair.

The equipment that generates the lumia requires a good deal of maintenance and can overheat. In the exhibit, mechanical hums and whirs make you aware of the laborious nature of Wilfred's compositions. Today, we are creatures of the screen, but Wilfred created his lumia before the advent of consumer television and computers, and they have a beauty and ethereality unmatched by computer-generated imagery.

In 1965, Wilfred received a \$2,500 award from MoMA, which had supported and exhibited his work for more than two decades. In a letter, MoMA director Alfred H. Barr, Jr., commended Wilfred for "achievement in an art invented and perfected by you." Perhaps this exhibition will restore recognition to this singular, visionary artist.

SARAH L. COURTEAU is a freelance writer who lives in Connecticut.

BELOW LEFT

Lumia Suite, Opus 158, Thomas Wilfred, 1963–64. Projectors, reflector unit, electrical and lighting elements, and a projection screen.

BELOW RIGHT

Unit #50, Elliptical Prelude and Chalice, Thomas Wilfred, 1928. From the *First Table Model Clavilux (Luminar)* series. Metal, fabric, glass, and electrical and lighting elements on a maple table.

Photos: Courtesy Yale University Art Gallery





SEEN

Casablanca, Cuba

Spending 10 days in Cuba feels like a month of experiences. There's 360 degrees of stimulation that touches all five senses and awakens what you might call the sixth. Despite its combination of a tough history, crumbling built environment, and dire social and economic conditions, Cuba displays its perseverance in a beautiful combination of people, architecture, and natural environment. There's a word for this in Spanish—*resolviendo*—meaning “solving,” though the deeper meaning translates to “doing the best you can with what you have.” That energy can be seen almost everywhere you look.

I've recently been interested in the delicacy of telephone and electrical poles, in the contrast of light wires and strong structures. This one in particular happened to stick out to me as I walked through the ward of Casablanca on the way to a train station. The amount of wires haphazardly wrapped and spliced into the system set against the backdrop of crisp blue sky and white clouds looked so sculptural and tactile. There's an order to the chaos, or vice versa. This image isn't a summary of my time in Cuba, just an example of a simple, beautiful moment set against the reality of the country's needs.

CHRISTIAN BORGER is a student at Boston Architectural College, where he intertwines his love for design, photography, and making.

Listen Hear: The Art of Sound

Isabella Stewart Gardner Museum

Through September 5

How do we look at sound? How do we hear images? In seven onsite and two offsite installations, nine sound artists attempt to represent Mrs. Gardner's intensely personal vision of a life immersed in the arts. Familiar and yet often overlooked spaces and objects are infused with new energy and reimagined through emotionally intense, sonic tête-à-têtes. We hear echoes of past events and visits, voices from communities next door and around the globe, vibrations created by nature and by artifice, harmonies reconciling the organic and the technological, reverberations from the past pointing toward the future—a multitude of sounds expanding our awareness of the beauty within and around.

Architect Philip Beesley's *Sentient Veil* invites us to shelter under the myriad acrylic fronds that make up his delicate three-dimensional textile. As tempting as it is, a touch would shatter the tiny colored lights, the flowerlike miniature speakers, and the vials of colored liquid—some of it Beesley's blood—to underscore that more than sweat and tears went into making this beautiful homage to fertility and devotion. Movement under the structure sets off sounds reminiscent of the beginning of life, inviting us to explore our own wonderment about the origins of life forms. The sound sculpture references the museum's glorious Fra Angelico painting *The Death and Assumption of the Virgin* (1430–34), with its pastel coloring and otherworldly images of adoration, birth, death, and eternity.

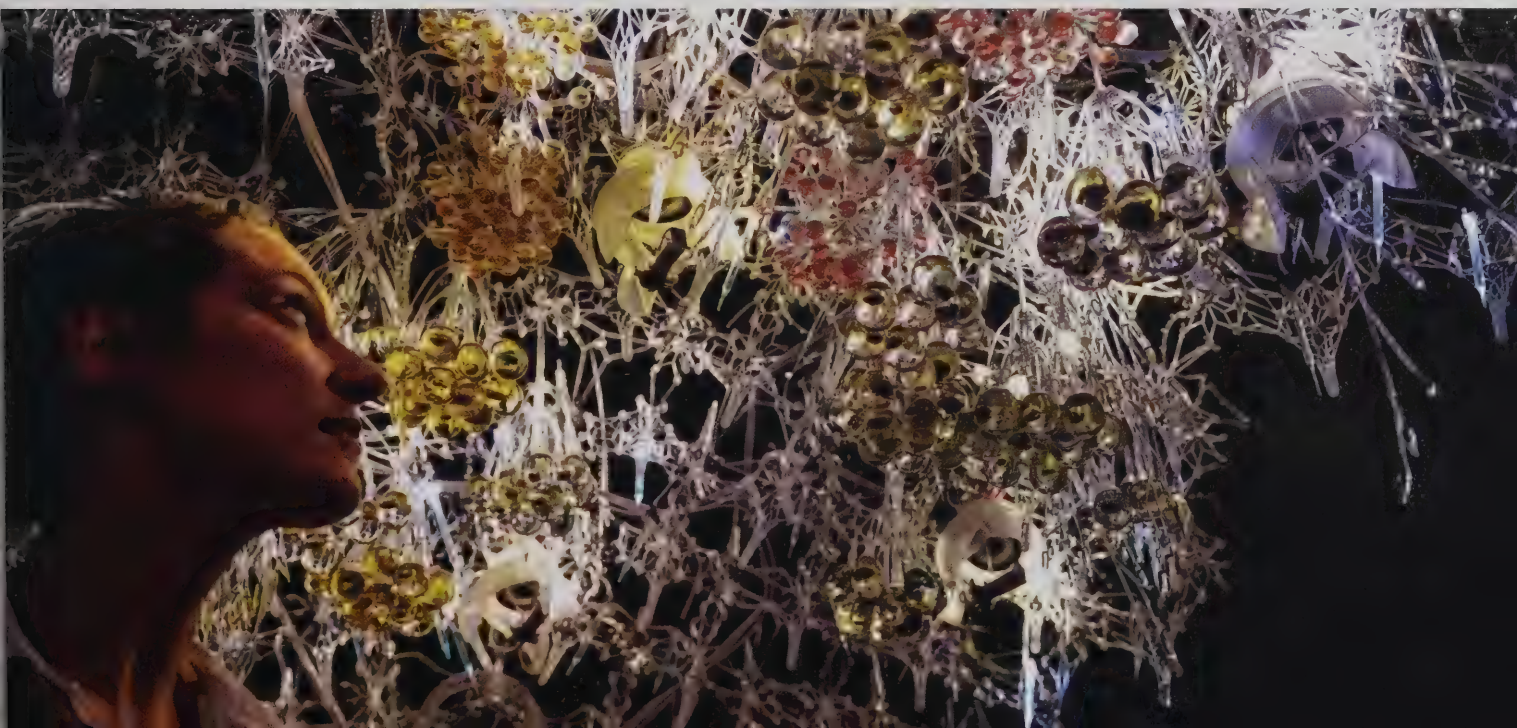
The spare, light-filled Renzo Piano–designed Hostetter Gallery is the three-dimensional setting within which architect Philippe Rahm presents *Sublimated Music*, his existential puzzle of deconstructing and reconstructing sonic and visual experience. Hanging colored lights, which fracture white light, reflect onto the floor as puddles through which we wade as we listen to two phrases of a Debussy piece continuously fragmented via 56 speakers set on the walls. As we traverse the space, we form and re-form connections among the notes and the colors, mimicking our experiences with the many objects in the museum.

Lee Mingwei adds *Small Conversations*—his personal vocal creations of insect and amphibian calls—to the glass-covered inner courtyard, bringing it to life through the inclusion of nature's sounds. We sit, listen, linger, and are brought into communion with the soul of the museum.

LINDA-RUTH SALTER is a coauthor, with Barry Blesser, of *Spaces Speak, Are You Listening: Experiencing Aural Architecture* (MIT Press).

BELOW

Sentient Veil, Philip Beesley, 2017. From *Listen Hear: The Art of Sound*. Photo: Philip Beesley Architect





AHEAD

Frank Lloyd Wright at 150: Unpacking the Archive

The Museum of Modern Art, New York City

June 12–October 1, 2017

In honor of the 150th anniversary of the American architect's birth, MoMA is staging an anthological, 12-section exhibition that will delve into objects from the Frank Lloyd Wright Foundation Archives. More than 400 items from the 1890s through the 1950s—from drawings and building fragments to paintings and scrapbooks, some of which have never been publicly exhibited—will be contextualized to showcase the many aspects of his practice. Wright himself made this retrospective possible by meticulously archiving his life's works. A designer who embraced new technologies and do-it-yourself construction systems, he was one of the most prolific architects of the 20th century. The museum will mine its own collection as well as others from around the globe to assess the Wisconsin-born pioneer's legacy.

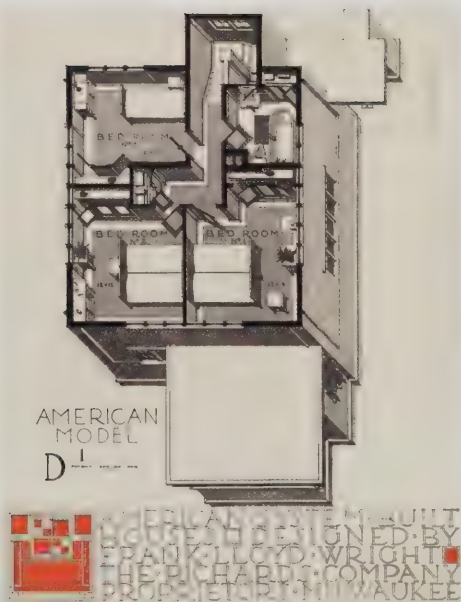
ABOVE

Annunciation Greek Orthodox Church, Wauwatosa, Wisconsin, 1955–61. Stained-glass design by Eugene Masselink. Pastel and pencil on paper, 24.25" × 48.25".

LEFT

American System-Built (Ready-Cut) Houses. Project, 1915–17. Model options. Lithograph, 11" × 8.5".

Images: Courtesy Museum of Modern Art, New York City



Housing and Policy in an Aging America

Harvard Graduate School of Design
Cambridge, Massachusetts
March 6, 2017

Lots of us are getting old, and fast. At the same time, our dwellings and the situations that most of us live in are not cut out for living with dignity in old age. While this is a challenge in the United States, it is an even bigger issue globally, especially for the poor.

A panel sponsored by the Harvard Joint Center for Housing Studies and the GSD Department of Urban Planning and Design reasoned that if we start paying attention to the challenge now, societies will be better prepared when the full weight of aging populations reaches its peak by 2035.

"Are you looking forward to old age?" Emi Kiyota, Harvard Loeb Fellow and founder of the nonprofit elder-care organization Ibasho, asked attendees, evoking realities such as difficulty navigating stairs, disruptive hospital stays, isolation, and institutionalized nursing home living. The numbers bear out the scale of the challenge: One in five Americans will be over 65 by 2035, health and elder-care costs already represent 20 percent of the US economy, and fewer than one in four dwellings have all the physical features suited to aging in place.

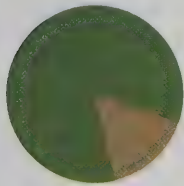
Steering the conversation toward solutions, the panelists offered alternative models: tele-medical care, granny flats, multi-generational cohousing, socialization-focused group homes, and community integration support programs that are more than

just care-delivery services. The ideal, they agreed, is to age in place, with in-home support. But what steps can we take to get there? Upgrading our existing housing stock will take a long time and comes at a high cost. Most new residential construction is suitable, but current production rates are too low. Perhaps, as was suggested as the discussion drew to a close, in an era of high demand, we just need better policies—primarily, relief of residential zoning restrictions—to encourage more new housing in general.

MATT LARUE AIA is a senior associate at HMFH Architects in Cambridge, Massachusetts.



One in five Americans will be over **65** by **2035**



20% of the US economy is health and elder care

Fewer than **ONE** in **FOUR** dwellings are suited for aging in place



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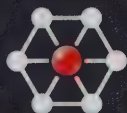
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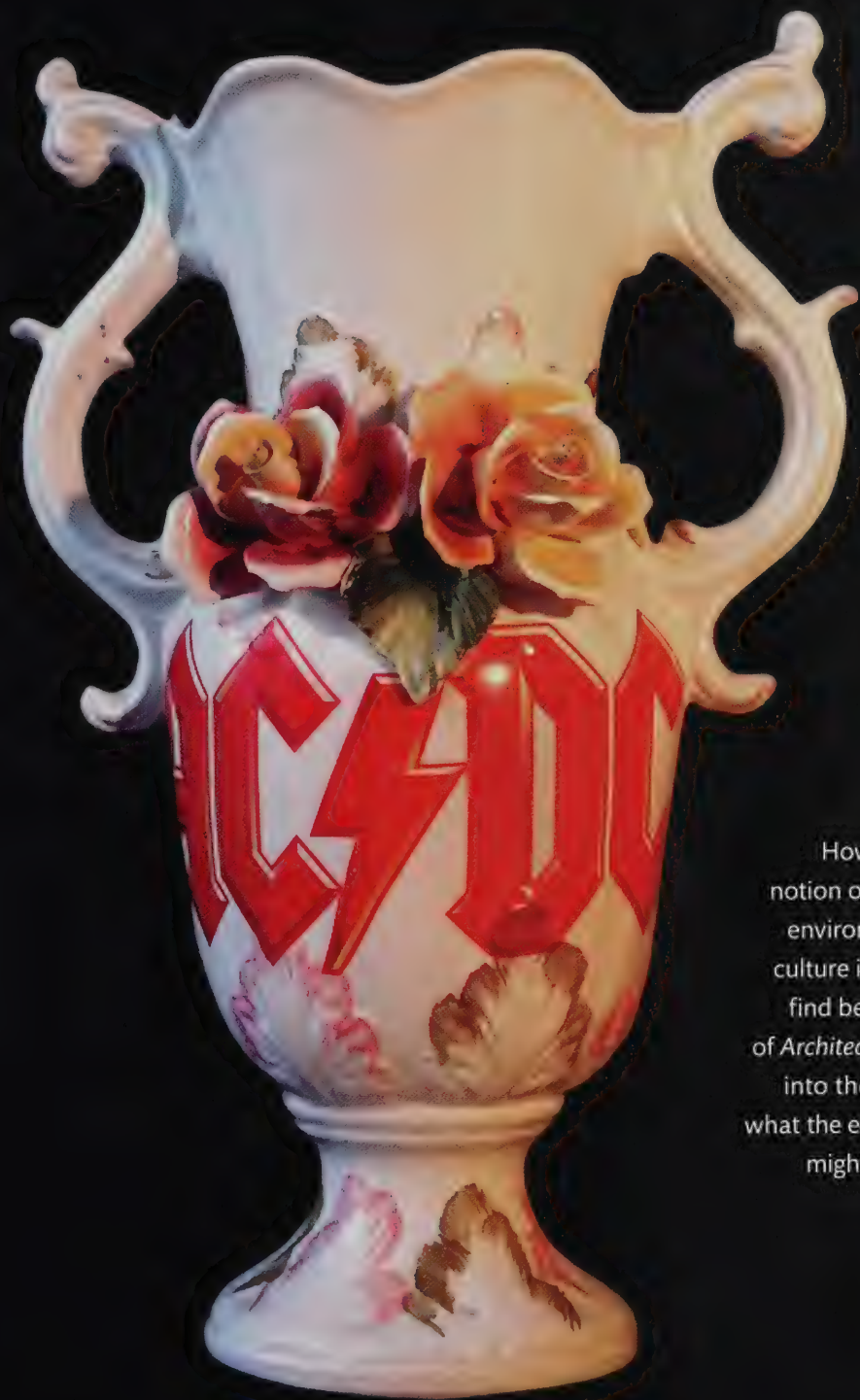
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TASTE

SUMMER 2017



How do we apply the notion of taste to the built environment? How does culture influence what we find beautiful? This issue of *ArchitectureBoston* wades into the fray to examine what the eye of the beholder might reject—or revere.

Heavy-metal vase, by
Le Garage Pierre Blanc.
Photo: Pierre Blanc.



EVERYONE'S A CRITIC

A selection of
Harleston Parker
Medal winners, with
comments from
a variety of corners



Courtesy of the Boston Public Library,
Leslie Jones Collection



Courtesy of the Cambridge Historical
Society, CHS Postcard Collection

1927: MOTOR MART

Ralph Harrington Doan

"Lugubrious.... My nominee
for the silliest Parker."

ROBERT CAMPBELL FAIA

The Boston Globe (March 17, 2013)

1934: ALICE LONGFELLOW HALL, RADCLIFFE

Perry, Shaw & Hepburn

"A lighter, more attenuated neoclassical
feeling.... Patently a riff on Bulfinch's
University Hall in Harvard Yard."

DOUGLAS SHAND-TUCCI

Harvard University: An Architectural Tour
(Princeton Architectural Press, 2001)

IN AN EXTRAORDINARY SPACE

HARLESTON PARKER MEDAL JURIES ENGAGE IN AN INTRICATE TUSSLE WITH THE NOTION OF BEAUTY

by Christina E. Crawford

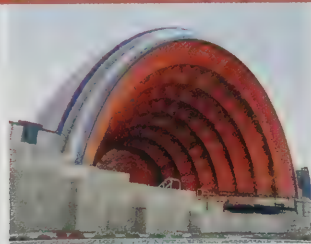
Here is your charge: Select the most beautiful piece of architecture, monument, or structure built in Boston in the past decade. Not the most prominent, not the best—the most beautiful. Now, place your choice alongside those of nine other people whose criteria for beauty differ from your own, and decide, collaboratively, on a single winner. How can a democratic process, you might ask, arrive at consensus about a quality as ineffable as beauty?

Since 1921, under the auspices of the Boston Society of Architects/AIA, 10 jurors annually are asked to undertake just this task, to bestow on a single project the Harleston Parker Medal. The medal is Boston architecture's highest honor, one that dares pose the question of what constitutes beauty in the built environment. I was given three opportunities to devise an answer, twice as a jury member and once as jury chair. Each of those years, despite the seeming impossibility of the assignment, the jury established a hard-fought, transitory definition of beauty.

A glance at the past near century of medal winners reveals that juries cannot help but channel the preoccupations of their historical moment. In the jury's fifth year of deliberations, the winner was the Motor Mart in Park Square, the world's largest garage at the time. With its smooth double-helix ramps and capacity for 2,000 cars, the Motor Mart was 1929's model of the architectural sublime. Postwar European Modernism was the fashion in the 1950s, as evidenced by a string of spare, horizontally articulated winners such as Harvard's Allston Burr Lecture Hall (1953

LEFT

Graphic based on patterns on the Bruce C. Bolling Municipal Building in Roxbury, Massachusetts. From a poster series by Giuseppe Gallo, inspired by the work of the Dutch architecture firm Mecanoo. Image: Courtesy of Mirabilia



Bill Morrow/Creative Commons

1941: EDWARD HATCH MEMORIAL MUSIC SHELL

Richard J. Shaw

"The inner ring of the ornamental wood inlay of the Hatch Memorial Shell looks like a fan of coffins."

LAURA K.

Yelp (July 25, 2011)



Shepley Bulfinch

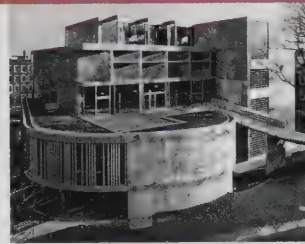
1953: ALLSTON BURR LECTURE HALL, HARVARD

Shepley Bulfinch
Richardson and Abbott

"No possible stretch of the imagination can see any sign of beauty in these structures."

R. CLIPSTON STURGIS

Architect and Harvard alumnus,
letter to the *Harvard Bulletin* (1951)



© Fondation Le Corbusier/ARS, 2017

1964: CARPENTER VISUAL ARTS CENTER, HARVARD

Le Corbusier

"The building could not have been put down in a less sympathetic setting if it had been dropped from the moon."

ADA LOUISE HUXTABLE

The New York Times (May 28, 1963)



Ezra Stoller/Esto

1970: DESIGN RESEARCH INTERNATIONAL

Benjamin Thompson
and Associates

"For all its air (and the fact) of being a tour de force, the building is oddly disappointing as one regards it from across the street."

JANET MALCOLM

The New Yorker
(November 7, 1970)

winner). The jury was also not immune to the attraction of historically inflected Postmodernism in the 1970s and '80s, seen most monumentally in the 1989 winner, the Hynes Convention Center.

But the Harleston Parker Medal represents more than just fleeting public taste. Almost all of our most treasured, if controversial, 20th-century structures are on this list: the three John Hancock buildings (1924, 1950, and 1983 winners); the Edward A. Hatch Memorial Shell (1941); Le Corbusier's Carpenter Center (1964); Boston City Hall (1969); and Post Office Square Park (1992), to name a few. Somehow, the multistep process of nomination, visitation, and deliberation that Harleston Parker juries undertake each year results in the selection of built work that has a good chance of withstanding the vagaries of taste and time.

At the annual introductory meeting, newly acquainted jury members grapple to define provisional criteria for beauty that will drive assessment of the nominees. This is always an uncomfortable conversation. The Harleston Parker jury is purposefully heterogeneous. In any given year, it is composed of experts from architecture, landscape, and urban design; municipal and federal government; arts management; engineering; contracting; journalism, or any number of other fields that engage the built environment. Each jury member inevitably sees the nominated projects through the lens of professional expertise. Asking each of them to expose their soft core—where beauty resides—is another matter altogether.

Nevertheless, this initial discussion teases out many commonly held criteria the jury repeatedly returns to in the review of nominees. We are reminded of the Vitruvian triad of Firmness, Commodity, and Delight. (One juror suggested

that Delight was where the group should focus its energies.) We consider the importance of immediate, positive visceral reaction. We talk about the necessity for holistic quality; we argue about the import of civic responsibility in this context. (Must the medal go to a publicly accessible building?) We debate whether beauty equals "supermodel gorgeous" or something deeper.

We attempt to approach our task with intellectual clarity but promise to remain open to the physiological signs of beauty. Does an architectural experience hit the stomach before it stimulates the mind? That response might signal beauty as well.

Jury members sit together for hours, stretched over multiple meetings, to look at and discuss images of 100-plus nominated projects. It is an arduous process of negotiation—punctuated by moments of strong aversion and impassioned advocacy—to cull a short list of finalists to visit in person over the course of a single day.

These site visits are critical to the success of the process on two accounts. First, they provide each juror the opportunity to assess the project's success from a distinct disciplinary standpoint. Architects and builders judge craft. Urban designers and landscape architects evaluate contextuality. Governmental representatives gauge the project's social impact. This is the technical-professional benefit of engaging the projects in person. But second, and arguably more important, the site visits test the haptic and, dare I say, spiritual resonance of each finalist. A photograph, no matter its fidelity to the subject, cannot replicate the inexpressible transcendence that an extraordinary space grants both body and mind.

In 2012, my final year on the jury, we narrowed our final field to an academic lab, a structured landscape, a synagogue, and an art museum. After a long day of site visits, we sat down

1980s



1989: HYNES CONVENTION CENTER

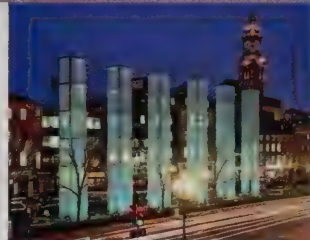
Kallmann McKinnell & Wood

"(The architects) have reconstructed a particularly dreadful piece of early 1960s modernism, taking a violently anti-urban building and integrating it gracefully into the dialogue of the street."

PAUL GOLDBERGER

The New York Times
(February 26, 1989)

1990s



1997: NEW ENGLAND HOLOCAUST MEMORIAL

Stanley Saitowitz

"This memorial doesn't look like one at all....Once closer, a story unfolds and it is a somber reminder while on vacation of how fortunate we all are and how wicked times can be."

ERSUN U

TripAdvisor (April 2017)

2000s



2007: INSTITUTE OF CONTEMPORARY ART, BOSTON

Diller Scofidio + Renfro
and Perry Dean Rogers Partners

"Random architectural 'events'...recall the tenor of [the architects'] earlier work. They range from the somewhat disorienting Mediatheque...to the glass-walled elevator."

ARCHITECT MAGAZINE

(July 17, 2012)

2010s



2012: MIT MEDIA LAB

Fumihiko Maki | Maki
and Associates with Leers
Weinzapfel Associates

"Sometimes it feels like a science-fiction spaceship, other times like a messed-up kindergarten, and other times like a pristine museum."

DIMITRIS PAPANIKOLAOU

Quoted in *SHIFT* Boston blog
(December 16, 2011)

to discuss our experiences and to agree on a winner. Two hours into deliberations, the jury was deadlocked. Would we be forced to reconvene and start the conversation anew or simply walk away without awarding a medal? Five jurors must agree for a winner to be elected; periodically, a No Award year does come around. The conundrum, of course, was to decide which project was most beautiful, and the inherent subjectivity of such a choice once again took center stage. Finally, an Olympic-year analogy helped to break the deadlock: Was our collective choice akin to the high jump or the decathlon? (Kudos to James Arthur Jemison for this excellent, and funny, way of framing the problem.) In other words, could a building be judged most beautiful for a singular beautiful space that exceeded all other spaces that the jury experienced (sublimity, the highest single jump), or was holistic beauty the ultimate criteria (synthesis, as proven by the 10 events of the decathlon)? We agreed on holism, and the deadlock was broken.

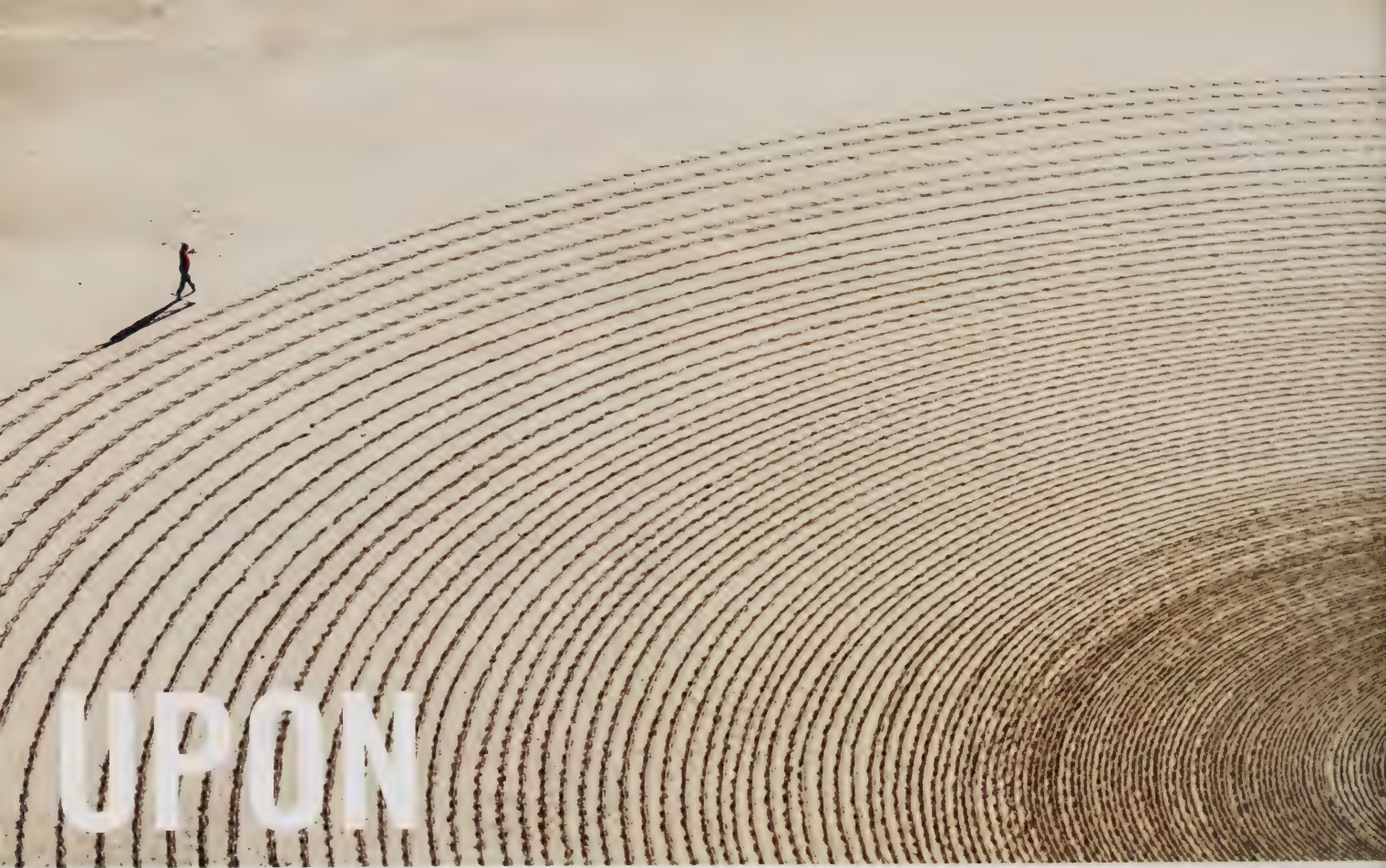
We awarded the 2012 Harleston Parker Medal to the MIT Media Lab, designed by Maki and Associates with Leers Weinzapfel Associates. The Media Lab is a materially austere building, with a restrained palette of opaque white surfaces, transparent expanses, and strategic punches of bright color (most often to highlight vertical circulation). While the material asceticism and impeccable architectural detailing caused one juror to have to "stretch" her definition of beauty, its quietness—or severity, depending on one's viewpoint—serves a distinct purpose: to allow the building to act as a fairly mute catalyst for its animated program. Based on early discussions about the importance of user pleasure as a criterion for beauty, we had decided to visit the projects at their most vibrant, with people

and activities at full throttle. The Media Lab is a building that shines specifically in this context. It was custom-designed for the idiosyncratic, interdisciplinary, and interactive work style Media Lab innovators had developed over time in their previous space. It is a building that undeniably loves and is in turn enhanced by its occupants. The jurors agreed that the design

Beauty is an architectural quality little discussed and even more rarely agreed on.

supports collaboration on an innovative level and that its openness and spatial complexity allow users to take center stage. The building is beautiful in action: that is its strength. Only over time will we learn whether our selection of a spatially complex building that amplifies the activities within more than its own aesthetic virtuosity somehow captured the zeitgeist of the early-21st century.

Beauty is an architectural quality little discussed and even more rarely agreed on (unlike ugliness, which critics are happy to assign). This is why the Harleston Parker Medal is so important. It is an award that requires its grantors to look closely at the built environment and to open themselves to the emotional resonance of buildings and space. The medal is an annual celebration of the exceptional, communicating resoundingly to designers and clients that beauty is worth the effort. ■



UPON THE RISING STAIRS

MEDITATIONS ON THE SUBLIME

by Michael R. Spicher

As an artist, I came of age fully indoctrinated in the belief in the subjectivity of beauty. “Beauty is in the eye of the beholder” was a familiar concept, entrenched in our culture’s consciousness. It wasn’t until I began the formal study of aesthetics that I discovered this idea constituted a radical break from tradition. Before the 18th century, the belief that beauty was composed of objective properties dominated philosophic thought.

Were these pre-Enlightenment positions justified? Although the *experience* of beauty is necessarily subjective, a survey of history shows that specific properties of beauty recur. Proportion, for instance, has been associated with beauty since ancient Greece and still matters today. Yet a modern-day reaction against the objective view persists because of two main concerns: people can disagree about what is beautiful, and no one should have control over beauty.

For beauty to be objective, early thinkers believed it must have its source in something other than the human mind—either in the objects of the world or in something beyond the physical world. Since the world is a shadow of reality, Plato thought the perfect form of beauty resided in another realm, and physical beauty only imitates this perfect form. This view acknowledges our desire to transcend the banality of the world, which we can do by using worldly beauty as rising stairs. Transcendence carried through to Thomas Aquinas and other medieval philosophers, who believed that beauty had its ultimate source in the nature of God. When Aquinas presented his three conditions of beauty—proportion, wholeness, and radiance—each corresponded to a person of the Trinity. Even the cathedrals—their incense, vaulted ceilings, and colorful images—were designed so their beauty and sublimity would direct people to the transcendent God. These views can leave us feeling like beauty is beyond our reach.

An otherworldly beauty, however, is not necessary for objectivity; beauty



could also be grounded in the objects themselves. For Aristotle, beauty consisted of the appropriate order of the various parts to the whole. This order was demonstrated in part by mathematics (such as the perfectly symmetrical golden ratio), which was physically represented in the Acropolis.

As aesthetics gradually became overshadowed by developments in science, thinkers shifted the source of beauty to the mind, turning their attention to taste. During the Renaissance and Modern periods, philosophers even posited an internal sense of taste. To account for obvious examples of better opinions, David Hume envisaged the “true judge,” whose imagined opinion consisted of five elements: strong sense, united to delicate sentiment, improved by practice, perfected by comparison, and cleared of all prejudice. Although Hume’s true judge was only hypothetical, it hastened the modern split between people of different social classes, a division that is still embedded into our cultural distinctions between highbrow and lowbrow, fine and popular art.

Immanuel Kant sought to unify previous positions, claiming judgments of taste were both subjective and universal. For Kant, judgments can be nothing but subjective. At the same time, we are justified in believing that what we find beautiful should have universal appeal. The problem with this arrangement is that beauty officially became the purview of people alone, with their varying judgments. There was nothing outside the individuals to ground their separate judgments.

When people were entrusted with beauty and their world shattered, they wanted to shatter beauty in return. Having

experienced two world wars in the 20th century, artists and thinkers reacted, wiping the slate clean of historic tradition and its long-held assumptions. This opened the question whether there is any such thing as beauty at all. “Our era pretends to want to disregard” it, Albert Camus wrote in 1948, but “Man cannot do without beauty.”

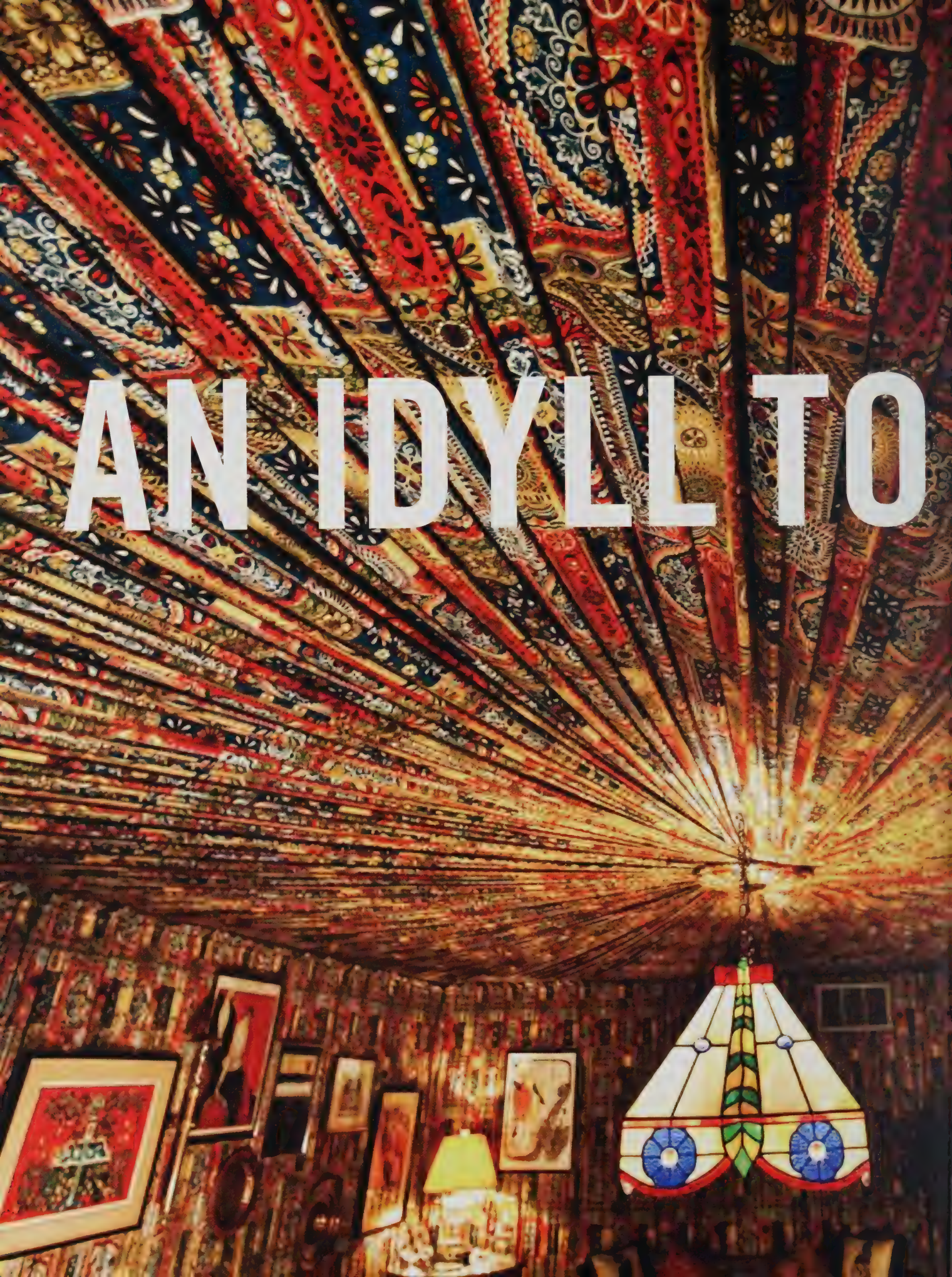
Since that time, beauty has become a taboo topic among many practitioners of art and design. To guard against anyone controlling a single standard of beauty, they have suppressed their commitment to any particular notion of the beautiful. This has only backfired, as beauty is too often relegated to the inessential. Of course, people still appreciate and create beautiful things. But our attitude toward beauty has changed; few even attempt definitions of it anymore.

Yet it’s clear we still need beauty in our lives. Not having a firm answer about the precise nature of beauty is not an excuse to neglect trying to understand it or adapting it to our time. After all, it is through experimenting with new designs and putting our work out there that we occasionally hit on something that resonates with others. People may disagree about which objects are beautiful (or their degree of beauty), but no one seems to disagree that beautiful, pleasurable things exist. We should strive for beauty, so that we may create or experience it. ■

ABOVE

Single Line Spiral, Jim Denevan, 2011. Temporary sand drawing created by making 138 circling turns in Half Moon Bay, California. Photo: Courtesy of the artist

AN IDYLL TO



THE KING

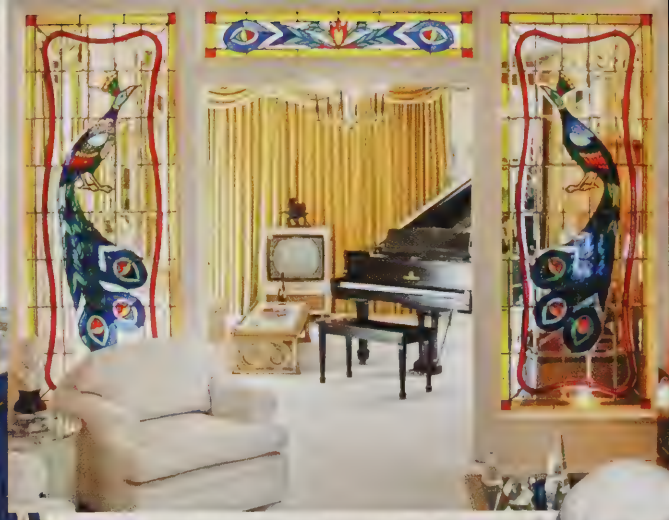
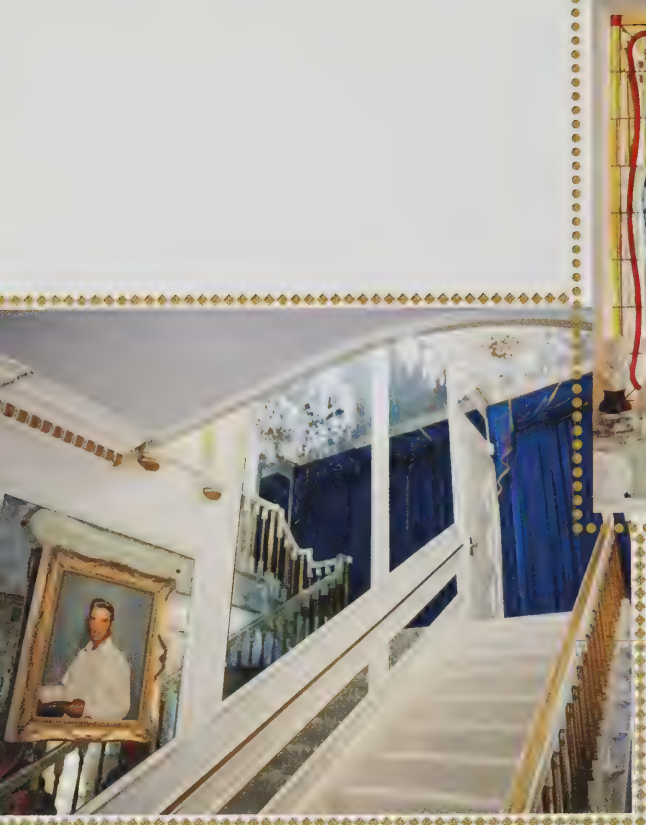
WHEN YOU GIVE IN TO GRACELAND, TASTE IS TANGENTIAL

by Henry Scollard AIA

I first visited Graceland, Elvis Presley's famed estate in Memphis, Tennessee, for the reason I suspect many people go to NASCAR events and hockey games and probably Graceland itself: I wanted carnage. Elvis, at that time, meant little to me. American pop-cultural significance aside, Elvis Presley was a washed-up relic, a bloated has-been. In my mind, "Jailhouse Rock" and "Hound Dog" took a distant back seat to Hollywood hackwork, Vegas, and white jumpsuits. His extravagance, however, was the stuff of legend. There were no half measures for the King of Rock and Roll. His mansion, said to be a gaudy masterpiece, had become a kind of shorthand for bad taste. I came to Graceland as a rubbernecker. I left as a convert.

Our homes, and the objects we choose (or not) to fill them with, reveal much about ourselves: memories, secrets, aspirations. They are the museums of ourselves, each of us a curator. Nowhere is this more colorfully in evidence than at Graceland, which has been open to the public since 1982. The house was his magnum opus; Elvis never stopped redecorating in the 20 years he owned it. Part museum, part working residence (family members continued to occupy the house until the mid-'90s), it has changed little over time. Anybody can now experience Graceland as Elvis did. Only the second floor, where he succumbed to a cardiac event in 1976, is off limits.

LEFT
Interior of the Pool Room.
Image: Thomas Hawk/
Creative Commons



LEFT AND ABOVE

Foyer. Photo: Chris Glass

Music Room. Photo: Chris Glass

RIGHT

Porcelain monkey from the TV Room.
Photo: C-Monster/Creative Commons

Interior of the Jungle Room.
Photo: Martin Norris Travel
Photography/Alamy



Rumor has it that a plastic Jesus statue guards the padded double doors of the master suite.

Initially, Graceland seems oddly formal given its reputation. The entry foyer and flanking living/dining rooms are funeral-parlor stiff, decked out in white carpeting, mirrored walls, royal blue drapery, and abundant gold trim. (The living room is, in fact, where Elvis' private funeral service was held.) The centerpiece is the 15(!)-foot-long white sofa, built to accommodate the sizable coterie of Presley family and friends (the

Down a stairway is the TV Room, a yellow-and-black hall of mirrors. Dominated by a giant sectional sofa, the room includes a leather-upholstered bar along one wall, the signature Elvis "TCB" lightning bolt (Taking Care of Business—in a flash) painted on another, and a trio of wall-mounted TVs (an idea Elvis copped from LBJ, the better to watch multiple football games simultaneously). A porcelain white monkey, one of several in the house, frolics on a mirrored coffee table, while a menagerie of glass clowns patrols the bar. Next door is the art nouveau tent that is the Pool (billiards) Room. Some 350 yards of elaborate print fabric cover virtually every surface in the room, furniture included. The basement is, in effect, a proto man cave. Exterior windows are covered up, sealing out the real world and enhancing the nighttime ambiance.

Back upstairs is Graceland's highlight, the so-called Jungle Room. A converted patio, this tiki time capsule of plastic plants, faux fur, rainbow lights, and animal prints is a phantasmagorical tribute to Polynesian culture. One end of the room is completely taken up by a working indoor waterfall. Sofas with gargoyle arms jostle for space with wooden island-god thrones. Built as a den, the Jungle Room was also a recording studio where Elvis laid down much of his later work. The ersatz exotica of the Jungle Room channels the King's personality more directly than any other space in the house. It's fake, but it's also very real. His sense of humor is evident throughout. Say what one will about the green shag carpeting that

GRACELAND STANDS AS THE WORK OF A RESTLESS INDIVIDUAL WITH MEANS AND DREAMS IN EQUAL MEASURE.

"Memphis mafia"). Off in the distance is the Music Room, featuring a black baby grand piano, a limestone-clad console television set, and floor-to-ceiling gold curtains. The kitchen itself is typical of the era: wood cabinetry, Formica counters, stained glass lamps. It is not difficult to conjure Elvis here in his pajamas, himself conjuring up a nocturnal peanut butter, banana, and bacon sandwich. By at least one standard of "good taste," Elvis was a supreme arbiter, a veritable Oscar Wilde.

The real fun begins, as it always does, in the basement.



THE THING ABOUT THINGS

Books, records, photographs, paintings, figurines—the objects we put on display in our homes are far from random. They reveal what we don't (or won't) say about ourselves. While I may not be a reliable narrator when it comes to my life, the highlights of my own cat burglar-confounding Graceland tell a truer tale:

- **The Robot**, a bizarre '70s-era hairdo contraption found on the curb in Downtown Crossing. It rode the T back with me that night and has enjoyed pride of place ever since.
- **An army of Bob's Big Boys**. The tip of an iceberg of midcentury pop-culture/roadside paraphernalia.
- **A plaster Henry Winkler Life Mask**. First (and last) eBay purchase. The link was sent to me as a joke that I interpreted as a dare.
- **Amateur art**, aka paintings-pulled-from-the-trash. I love the unmindful abandon with which novice artists attack their work and find it poignant when they choose to discard it.

—Henry Scollard AKA

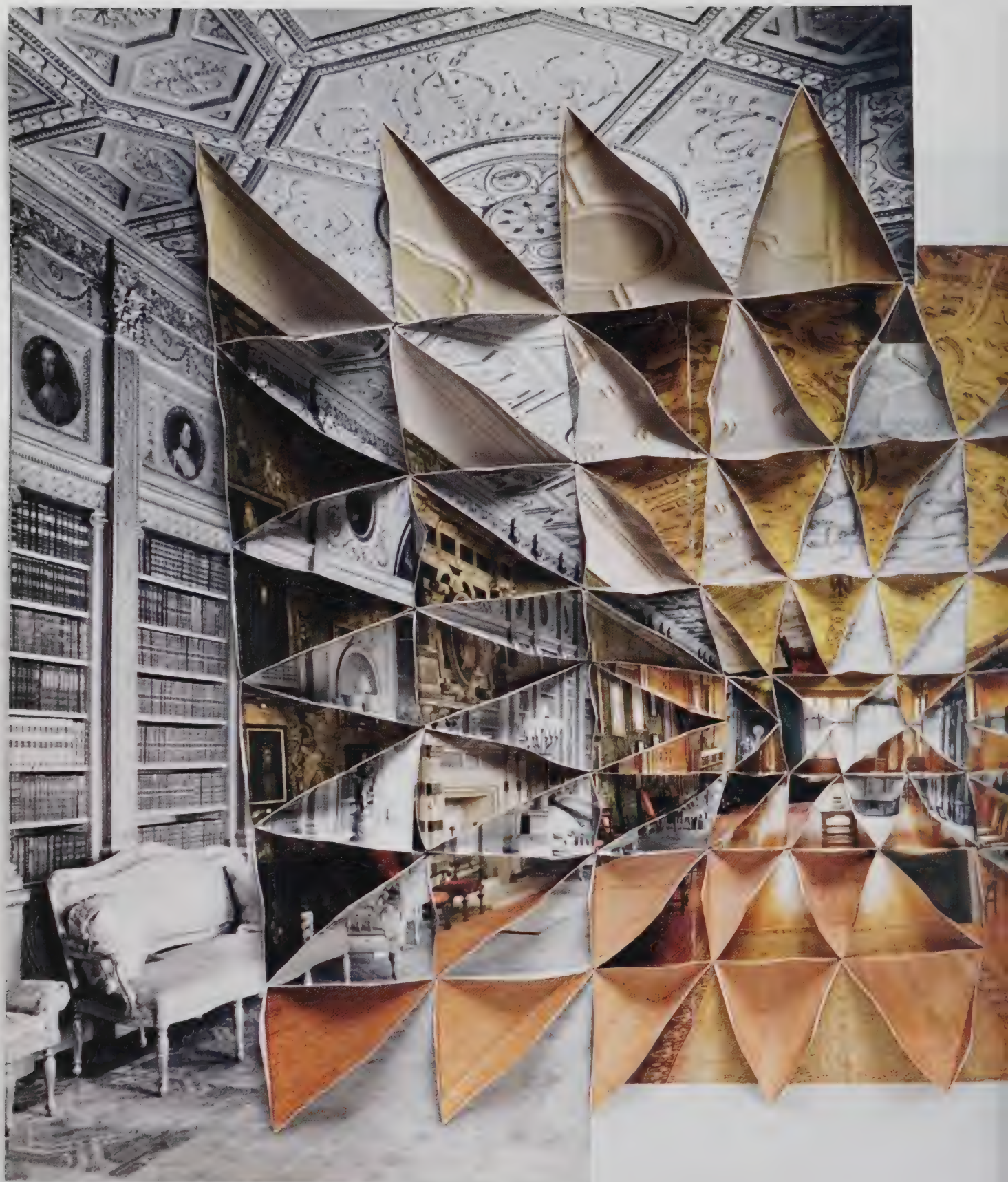
ARTIST

Big Boy, from the author's collection.
Photo: Henry Scollard AKA

covers both floor and ceiling, it is impossible to leave this room without a smile. This is design with a healthy disregard for convention, a joke that we're all in on.

The remainder of the tour (including a slot-car track-cum-trophy room and the Meditation Garden burial site of the Presley family) is moving and impressive, but it is the spaces personally touched by the King that truly resonate. Elvis was a corporation; his work was the result of many people. Graceland, however, was his home, his intimate domain. It offers a glimpse into his soul that we will never get from his music or films.

Less a house museum than a caper gone wonderfully awry, Graceland stands as the work of a restless individual with means and dreams in equal measure. Elvis was fast; TCB was more than just a mural. The Jungle Room was decked out in 30 minutes, based on a furniture set featured in a local television ad. No design options, sample boards, or study models. Grip it and rip it. There is much at Graceland that one could take issue with, but when something goes this far over the top, the standard definitions of good and bad taste no longer apply. Elvis may have inspired countless black velvet paintings over the years, but very little at Graceland can rightly be called “kitsch.” There is no irony here, no obvious critical distancing. This is a big kid creating the ultimate playhouse. I may not have had much time for Elvis that first time I visited Graceland, but his overwrought, underthought Xanadu won me over. Bold, playful, and manic, Graceland breaks every rule and inspires me to this day. ■



BEAUTY IS A BEAST

LANTHIER



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Elaine Scarry, an essayist and English professor at Harvard University, dives deep into questions of aesthetics as a moral guide in her book *On Beauty and Being Just*. This past spring, Mark Pasnik AIA met with Scarry in her office on campus for a conversation on the topic.

Mark Pasnik: I thought we could talk a little bit about the values that you see in beauty. What are the kinds of core, functional values that it brings to us?

Elaine Scarry: There are many values that beauty brings to us. It certainly brings to us the immediate experience of acute pleasure. In this case, it's acute pleasure in a way that is simultaneously somewhat decentering. A number of 20th-century, midcentury philosophers, Simone Weil and Iris Murdoch, have talked about the fact that when we come into the presence of something beautiful, we undergo an unselfing, or what Weil called a "radical decentering." That's crucial because there are lots of things in the world that bring about an opiated state, and there are lots of things that make you feel marginal or secondary. But there's almost nothing else that does both of those things at once, that makes you feel marginal at the very moment that you feel acute pleasure. That seems a kind of preparation or a rehearsal for caring about the injuries of the world or caring to repair injustices. Many people—my colleagues, your colleagues, artists, architects—believe that beauty for its own sake is a good thing.

Pasnik: You would agree with that view?

Scarry: I don't agree with it. I think that beauty may well be responsible for pressing us into concern with justice and pressing us into concern with the truth.

Pasnik: It creates action, essentially? That's one of its powerful tools?

ARTWORK: English artist Abigail Reynolds splices photographs into arresting collages that convey fresh narratives. In a 2012 *Diorama* interview, she lauded art that has layers of significance: "Works I love best are pleasurable to contemplate intellectually and physically (or optically) and unfold a series of linked questions." All photos courtesy of the artist.

LEFT

Long Gallery (2010). Three book pages cut and folded, 52.5 cm × 43 cm.

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Scarry: It does cause action. It's not as though you see something beautiful and then you shrug it off as though nothing happened. It prepares you for other things. It's not that I think we can be sure that an individual or an era that cared a lot about beauty also cared a lot about justice. I don't mean it to be quite that strict. It's much more supple. When you think of all the cruelty in the world, sometimes I'm astonished when you go back 10 or 20 centuries. On the one hand you find great instances of civilization, but on the other you often find the kind of violence we see today. Where in the midst of all this cruelty did the concern for equality and justice come from? Where did the idea come from that there has to be symmetry among individuals? That there is equality? I think where it came from is beauty.

Pasnik: Could you elaborate on the term "symmetry"? That's such a strongly used word in architecture, and I think you're talking more about equality and balance than geometric symmetry.

Scarry: I'm also talking about geometric symmetry. Symmetry is a word that you often hear being discredited, like it's something we're tired of. Yet symmetry is so crucial to many instances of beauty. It doesn't have to be a bilateral symmetry. It can be octahedrons inside of dodecahedrons and so on. Whether you're looking at a Japanese moss garden or a Greek temple or a vase or a child's face, it's going to be primarily characterized by symmetry. Sometimes people will cite instances of, let's say, somebody's face that isn't symmetrical, some ravishing beauty, but it's a tiny, tiny, fraction of asymmetry in the midst of great symmetry. If you have asymmetry in a face, it's when a soldier in Iraq has had his face blown up or somebody has bone cancer, and nobody confuses that with beauty. If you look at any account of justice, it always involves some definition of balance, equilibrium, beauty.

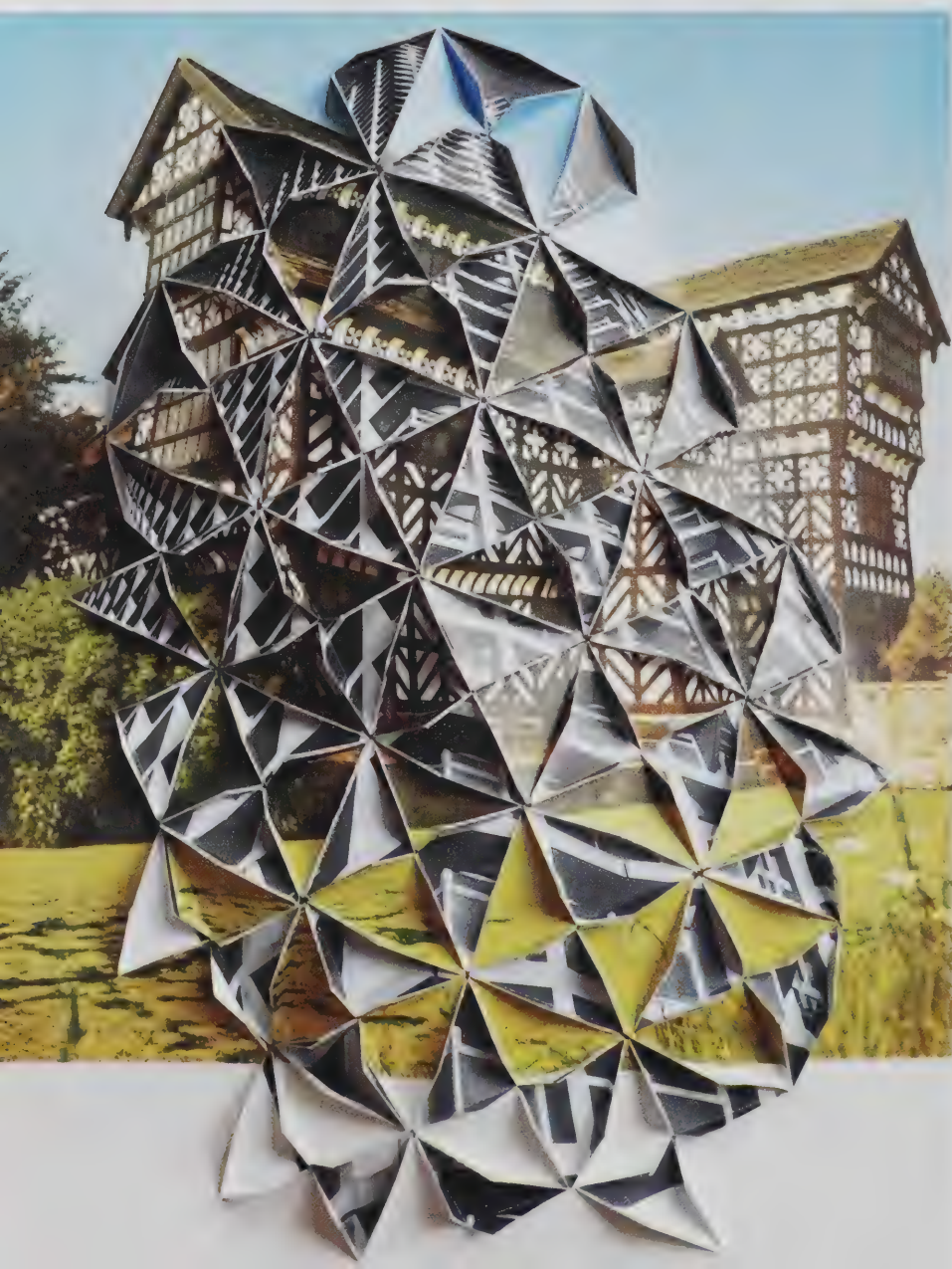
Pasnik: Do you find that to be more of a classical notion than a Modernist one? There are many architects who would argue against symmetry and look for dynamics that reflect our current society. I can think of a romantic beauty of a leaning, ancient barn; its lack of symmetry is actually one of its enduring, beautiful qualities. So I'm curious—you feel like it's a strong driving force?

Scarry: I do. Sometimes when we're talking about beauty, we're talking about the beautiful object itself, whether a person or a thing, and sometimes we're talking about the response to beauty. With symmetry we're talking about one of its features. Whenever I'm talking about other features of beauty, people tend not to challenge me; they say, "Well, yes, of course." But symmetry, they say, "No."

Pasnik: For me, trained as an architect, it was the word in your book that I had the most trouble agreeing with.

Scarry: Right. Once I was at a conference where a philosopher said, "Look, you don't need it. You've got all these other things that make your case. Why even bring it up?" I just had to bring it up because I think it's true. In the realm of architecture, it has to be symmetrical enough that it stands up, that it's safe, that it works. The thrill of it may be that there are ways of designing it so that the dynamism is outpacing the equilibrium. But still it's symmetrical.

Pasnik: Paul Rudolph, a midcentury Modernist who built a lot of concrete buildings, said that any architect who designs symmetrically should only get half the fee! I'm curious that symmetry is so





Much of the astounding needlework has been attributed to the Queen of Scots, during her long detention at Chateau de St. Germain. The velvet hangings in the hall, embroidered with the Virtues and Vices, are traditionally worked by the Queen, may have been made by French needlewomen for her apartments at Chateau de St. Germain.

217. HAREWOOD HOUSE: THE MUSIC ROOM

challenged. It's interesting to hear how often you've heard it challenged as well.

There were other concepts that you pulled out in your book that resonated closely with architecture but were less precisely descriptive, like the quality of "generous sensory availability." The decentering that you've talked about—I think of walking into a building and [being] profoundly thrown off your feet—and proportion, and symmetry as in ethical fairness; I found some allegiance in those points. But it is more challenging for me to embrace the word symmetry in its geometric meaning.

Scarry: All the things you mention are things that I believe very strongly. Plato talks about how beauty is bound up with truth and justice, but those things you only find in the other world. Or you find it in this world, but it isn't in the sensory environment.

Pasnik: How does beauty turn us toward justice?

Scarry: It does it in two ways. It doesn't seem like there's an inherent pressure for equal distribution in the realm of justice; otherwise, we could have figured all this out a long time ago. But with beauty, absolutely, it's there in so many different instances, whether it's the Fibonacci series, the arrangement of seeds in the sunflower, or many other things. First of all, that it's in the world to keep reminding us that there is this way of being that involves symmetry and balance. I think of the example of Augustine and *De Musica*, where he's writing

a whole section on the godliness of equality, how God is equality and music is equal measure. The godly is in the symmetry of dance steps, he says. It's in the smoothness of rose petals. It's even in the smoothness of cakes. It's in the iteration of a single color, like the blue of the sky, symmetrical across a patch or an expanse of color. He's not talking about political equality.

Pasnik: It's not a social issue.

Scarry: It's not, yet it's fine that it's not yet a social issue, as far as I know, for Augustine. He's already saying that equality is godly. If you take the fact that many people, starting from the Greeks and probably much earlier, talk about how you have to have punishment symmetrical to crimes, yet here we are, centuries later, and we don't have it figured out at all. We've got mass incarceration, no relation between crimes and punishment. This is all to say that it's aspired to in every definition of justice there is, whether you're talking about equal pay for equal work or about crimes and punishments or about a symmetry in everyone's relation with one another. The idea

LEFT

Centpoint (2008). Book pages cut and folded, 25 cm × 18 cm.

ABOVE

The Music Room (2008). Book pages cut and folded, 49 cm × 29.5 cm.

is there, but the instantiation of it isn't. We even argue about what the instantiation of it would look like; whereas with beauty, we're just flooded with examples, whether it's a bird in flight or one of your dynamic buildings or a staircase or whatever.

Pasnik: Do they call us to be more just?

Scarry: I think definitely, in part through that process of unselfing.

One of the features of beauty is its plurality.
Just think of the problem we'd have if each of us
took the same spouse, or if each of us wanted
to live in an identical house.

Pasnik: Because we're decentered, we sort of remove ourselves?

Scarry: Yes.

Pasnik: There was an interesting structure that I saw in your book, in terms of the relationship of beauty, beginning with a beautiful object, moving to the perceiver's cognitive act of beholding, and ending with a creative act that is prompted by it. And that seems like a recipe for positive things in the world to grow. There is a beautiful act. It triggers something, decenters us, and then encourages us—

Scarry: To create. Socrates' teacher Diotima told him that when you see something beautiful or someone beautiful, it gives rise to a desire to have children. But, she said, it also gives rise to the desire to make poems and philosophic treatises and good laws. Wittgenstein says when your eyes see something beautiful, your hand wants to draw it. And that impulse you can see, even for people who don't think of themselves as artists or architects or creators. They want to replicate it.

Pasnik: Is there a biological imperative in this process of beauty? Or do you see it as more cultural?

Scarry: I think of it as cultural, but you can see in people wanting generations to go on; at times, when there are very depressed circumstances, birth levels go down. So it may well be biological. People in the natural sciences keep pointing out that when insects and birds choose mates, they're often going by what they perceive as aesthetic qualities, including symmetry and color. They say that symmetry wins out over everything, that it's taken as a sign of well-being and health. Mario Livio, who is an astrophysicist at the Hubble Institute, points out this amazing thing, that in the Y chromosome there are more than 50 million sequences, 6 million of which are palindromes: the letters read the same way forward as backwards. He says the reason for that, they think, is to ensure survivability, so that if it's damaged in one direction, it can still be read in the opposite direction.



Pasnik: Fascinating. Yet I can't think of the last time, on a design review in a school that I've been to, somebody used the word *beauty* as a driving concept or way of thinking. I'm curious how that happened and if you have a defense of beauty or a rallying cry for beauty; is it reemerging in discourse?

Scarry: I think it is, but it was certainly absent in the '80s and '90s. I started teaching a graduate course called "On Beauty" in the early 1990s; it's not that the objects of beauty had no longer been in the literature departments or art history departments, because Keats' poetry is, for sure, beautiful.

Pasnik: It just wasn't discussed with that term.

Scarry: The formal features of the thing tended not to be discussed. I was addressing a problem in the university because



that's the area I occupy, but museum directors told me that they had also suffered from decades of this being a taboo. Jim Cuno, who's now [president and CEO] of the Getty [Museum]—he used to be at the Fogg—held sessions with museum directors from all over the country, where we would talk about beauty. Quite a few of them said they felt they had been under a taboo. Then I would speak at architecture schools, and they would say they had been under a taboo. Moshe Safdie FAIA, who's an architect I like very much, once said he felt that it was a vocabulary that had been eliminated. He certainly seems to me somebody who has always been very celebratory of beauty as a life pact. Individual artists, painters would say that it was a kind of banished word.

Pasnik: Why was beauty evicted from so much discourse?

Scarry: Well, the ostensible reasons that were given often took a form that was manifestly incoherent, in my view. One idea was that "the gaze" was something destructive. For sure, there are instances where somebody looks at somebody and it's predatory, and it's going to lead to something bad in the same way that an eagle looks at its prey. But that is not—

Pasnik: Not the reason to eliminate it.

Scarry: Exactly. The bizarre thing is, you'd be at seminars and everybody would be sitting around looking at each other, talking about how bad the gaze was. And yet, if you didn't look

ABOVE

Red Library (2010). Book pages cut and folded, 33 cm × 58.5 cm.



at anybody, you couldn't have a seminar. The even more bizarre thing is that it started getting transferred to things that weren't even human, so that I remember once hearing a lecture where somebody was talking about Keats' reifying flowers by the gaze. And people talk about destroying a painting by the gaze. You think, really? The painting isn't even there for us to look at?

Pasnik: So that's one side of the argument. In your writing, you display that there are competing arguments that almost disprove that.

Scarry: Because the other one was that beauty will distract us from important things. There's always a danger of that. I would rather sit there looking at flowers in my garden than writing about nuclear weapons. Yet it's my belief that doing the one helps you with the other. At the very least we can say that to argue that beautiful things distract, that you're actually hurting things if you fail to give them your regard, that's absolutely contrary to the idea that if you are gazing at the thing you are causing it injury.

There are other things that were equally incoherent. There was one idea—and I think that many people might still say

this today—that beauty is middle class, it's bourgeois. That's crazy. Very rich people are very often attentive to beauty, and very poor people are attentive to beauty. I like very much [Sebastião] Salgado's photographs of migrations, which had an accompanying volume called *The Children*. The reason he did that second volume was because whenever he was taking pictures of 4,000 people in Rwanda or a refugee camp in Tanzania—and those photographs, by the way, were often criticized for being beautiful, even though nobody had been thinking about how many people are just moving over the face of the Earth until Salgado started photographing them—these little children would get in the way of his camera. So he would buy them off by saying, "If you just stay out of my camera, I'll take a portrait of you." So in the accompanying volume, the individual portraits show that no matter how poor, no matter what country they're from—and they're from all different countries—they'll often have an exquisite little necklace on, or...

Pasnik: Some object of beauty.

Scarry: Some object of beauty. Or a beautiful head scarf. The idea that the people in their world and they themselves don't care about beauty is just insane.

Pasnik: What are your thoughts on beauty's role as a construct: Do we invent beauty? Do we observe it? Are there things that are determinative, or is it driven by culture? Does it change from era to era, or are there things that you see that are resonant across eras?

Scarry: Sometimes people think that it's a problem that different cultures revere different objects of beauty or discover different sites of beauty. I never understand why people think that's a problem. One of the features of beauty is its plurality. Just think of the problem we'd have if each of us took the same spouse or if each of us wanted to live in an identical house—we would never imagine that. Yet we somehow think it's a problem that there could be these disparate ideas.

Pasnik: So for you, beauty is more malleable and changing.

Scarry: Not only do I think that, but I think people who try to hammer it into a universal that we all have to agree to have a big problem making the argument because it's wrong.

Pasnik: That seemed like a fault in the argument.

Scarry: On the other hand, I do have to say that there are certain objects of beauty that I believe are held in common, such as children's faces and sunrises and sunsets and birds and the beauty of the blue sky. I'm not by any means ruling out the idea that there are shared objects of beauty. But there are huge variations.

Pasnik: You use this great phrase, "the reciprocal, life-giving pact between perceiver and the object." You mention beauty as a perceptual event, all of which seems to limit its time span. It's not necessarily something inherent to an object, but it might be an experience. Something might be fleeting or

ABOVE

Charcoal (2012). Book pages cut and folded, gold leaf, 31 cm × 43 cm.

RIGHT

Centrepunt 1975/1981 (2010). Book pages cut and folded, 27 cm × 15.5 cm. From *The Universal Now* series.

it might be long term, but there is a sense of time and agreement between, say, a set of parties.

Scarry: There are two different questions in what you're saying. One is the time duration, and the other is the pact. The endurance of the event can be just a matter of seconds, or it can be so enduring that if you come back to it three or 30 years later, it still is beautiful to you. I don't think that the things that only last three seconds aren't valid or real. They may not have the stamina, but I think that they continually moisten and refresh our perceptions. I think that it's the very fact that beautiful things don't endure—a beautiful person dies, a flower dies. One of my students said that goes together very well with the idea of creating. We keep creating because—

Pasnik: It's impermanent.

Scarry: And we have an obligation to the next generation of people to keep it in the world. Some of us do it by teaching, like making sure that *The Iliad* still gets read, to the next

generation. Some of us do it by creating new objects, like new buildings, to put in the world. But the life pact, the second part of the question, absolutely. That seems to me as important as talking about symmetry and explaining why beauty leads to justice. It's because it is affirmative of our perceptual acuity. On the one hand, it makes us feel that we have a place in the world. At the same time, it's decentering. There must be something about us in relation to the Earth that explains why it seems there couldn't be a more perfect Earth. More important is that I think it raises the level of perceptual acuity.

Pasnik: It seems to draw very closely into some of the issues of architecture, but it also seems like it's the generosity of beauty compared to the definition of beauty that is sort of rarefied and far away from you. It's far more powerful a reading of beauty than the arguments of why it was being evicted in the first place or why architects have trouble with it. It's because you think beauty has standards, and codes, and these kinds of constructs. When we think about the issue of taste—I'm not sure that taste has that

generosity. There's a construct that to have good taste means it's a structure, that there's a wide agreement around it. What are your thoughts on the relationship between beauty and taste?

Scarry: The argument against taste is we've agreed that there's plurality of beauty. If you start with people's choosing their life partner or even their temporary partner, it would be amazing to think that anyone could prescribe the person they should choose, even in cultures where parents arrange for marriages. So I think there is a problem with taste; it's being prescriptive in an arena where there's plurality of taste.

And yet, remembering that there are these common objects of beauty and that one of the goals is distribution of well-being, then I think that there are lots of objects of beauty that require assistance. That's why we have universities. Some things you have to struggle to see the beauty of.

Is the architect who's trying to wrestle with the subject of taste, is he or she going to accommodate the plurality of taste by having a building that's amorphous and keeps changing every time you turn around? To some extent, buildings can do that. If the Getty Museum and its surrounding grounds [were] in part based on the idea of a national park, it was in part imagining people doing different things or entering and exiting the building in lots of different ways. So there are ways of accommodating plurality, but I think that it comes down more on the side of either having principles of beauty that are already known to be



widespread, or if the architects are in the vanguard of seeing some new thing, then they may have to build in a certain education process.

Pasnik: To prepare themselves for beauty, or to understand beauty?

Scarry: Both. For example, in a verbal text, the poet will often give us practice in how to read an easy version of something before we have to read a difficult version of it.

Pasnik: Let's return to perceptual acuity. It seems that is one of the gifts that beauty gives us. It raises our awareness. In many respects it causes us to attend to things that we might not normally. How might architects, in particular, learn from that?

Scarry: Whenever we cross paths with something beautiful, it does cause this heightened awareness. It's suddenly electrifying.

When people argue that it steals, robs your attention from something else, I say: Do this experiment the next time you find yourself suddenly ravished or have your breath taken away by looking at something beautiful. What level of perception were you experiencing as you walked down the street? Were you generously looking at people, enjoying them, and thinking, How lovely? Or were you just numb? It raises the standard for what counts as perception because you feel what it is to be fully engaged. Then, either a voice in your head or a friend of yours will say, "Well, you've got to give that same level of perception to this over here, which you didn't originally think was so important." That way, that same perceptual acuity gets transferred to other things.

Pasnik: There is a shift in the language of beauty used from, let's say, classical origins in architecture. Vitruvius talks



about firmness, commodity, and delight—delight is the beauty, firmness is the strength, and commodity is the usefulness. So beauty is the third element. Then there's a shift in Modernism, where there's growing distrust of the word *beauty*, but it's positioned to grow out of those other characteristics. I wanted to read a quote from Marc-Antoine Laugier; in 1753 his Enlightenment-era *Treatise on Architecture* underpins a lot of what happens in the early 1900s with Modernist philosophy: "The parts that are essential are the cause of beauty. The parts introduced by necessity cause every license. The parts that are added by caprice cause every fault." There's a kind of integration of beauty with essence, with that kind of essentialness, but also a sense of function. Modernism privileges the expression of the way the building is behaving, the way it's formed, and sees a beauty in that. While beauty in a lot of modern discourse is set aside, it's also even more centralized in a way. It's the kind of term from which things have to grow.

Scarry: That's persuasive. That is really foundational.

Pasnik: It's essentializing, I guess.

Scarry: So it's not in the ornament, it's in the structure.

Pasnik: For me, the task of beauty as part of architecture would not be defined only as aesthetic. It would not be separated from the task to improve society and other kinds of tasks that architecture has. That would be part of its potential for beauty. That's one of the rich things about the way you interpret beauty in your book. The way I see it as having been banished because it's seen as this extra layer, and Modernism pushes away ornament (but not completely). It does seem that beauty's centrality is the argument you are making that does have a sustained practice in architecture, even with this shift away from the term *beauty*. That's an interesting inversion that your book draws out.

Scarry: As you were speaking, I thought of being so struck by the St. Louis Pulitzer [Arts Foundation] Museum by [Tadao] Ando because I had never understood that poured concrete could look that way. It seemed like a pearl. Yet there was nothing about it that is removable. Even though we think the building is its structure, it's also all its porousness to light and air and so forth, the kind of aliveness of the thing. It is, again, foundational. It is the ground of aliveness.

Pasnik: You talk about the opposite of beauty as injury. Most people think of the opposite of beauty as ugly. I wrote a book on Boston's concrete Modernism, from the 1960s and '70s, and *ugly* is a word that's commonly used by the public for this generation of buildings, which I find to be fascinating buildings that are powerful and imaginative. They awaken me in ways that you've described. My perception of them, the pact between me and them, is quite different than maybe the average public version. Is ugliness difficult? Beauty, terrible beauties, how do these fit into the larger picture?

Scarry: My book might have been faulted for not using the word *ugliness*; I just don't use it. I just don't quite recognize what it is, what the word means. Whereas *injury*, I very much recognize what it means. Beauty presses us to justice, but the spectacle of injury, which is very close to the word for injustice, can also press us toward justice. These are examples of what I was saying earlier, that for difficult poems or paintings that don't immediately strike every viewer as beautiful, there has to be the work of education that is carried out in a space adjacent to the beautiful thing, like a university.

Pasnik: We're two buildings down from the Carpenter Center, which is a good example.

Scarry: Absolutely. The building itself can teach you.

Pasnik: If you're prepared for it.

Scarry: Just like *The Iliad*. The 18th book is going to ask you to make incredible pictures in your mind of motion on the shield of Achilles that's going to climax with acrobats doing handsprings. It is one thing to say the words but to actually make a picture of that? Homer gets us to do it by having these things along the way that are much easier forms of making mental images that move. Instead of saying, "The spear flew through the air," he'll say, "The shadow of the long spear flew through the air." It's easier for us to make a picture of a shadow moving through the air because it's so rarefied and lightweight. All that is a rehearsal for Book 18, where we're going to have to do these kinds of tour de force acts of imagining.

Pasnik: Buildings could do the same.

Scarry: Even the edge of the spiral entryway on the Carpenter Center is a way of—

Pasnik: Folding you into it.

Scarry: Staging your own entrance into it, you know? I can imagine that there might be another building in the same genre, where instead of it being done in the entryway, there could be an alcove or a corridor where people in the building get it, and then get it again when they're back in the larger space. ■

LEFT

Desert Seeds (2015). Book pages cut and folded, 30.5 cm × 18.5 cm.



INFORMED SOURCES

ARCHITECTURAL CRITICISM IN THE DIGITAL ERA

by Mark Lamster

In 1969, in a nation divided over war and fearing the consequences of mechanization, R. Buckminster Fuller published *Utopia or Oblivion: The Prospects for Humanity*. This was the architectural gadfly's latest turgid sermon (it clocks in at more than 440 pages) on the need to embrace the technological future or face the dire consequences suggested by his title.

Fuller's book sprang to mind recently after the reading of another, albeit considerably shorter, exegesis on our potentially bleak future: "The Fate of the Critic in the Clickbait Age," by Alex Ross, the classical music critic of *The New Yorker*.

Ross defends the role of the critic but notes that in an era where the principal measure of journalistic value is popularity (as measured by digital traffic, or clicks), the arts generally and the critic in particular are doomed.

It is a problem we've struggled with at my own paper, *The Dallas Morning News*. It's hard for a review of a new building to compete head-to-head with an online story about the quarterback of the Cowboys or a tractor-trailer accident during the morning commute.

The plight is especially difficult for the music critic, given the "after the fact" nature of the standard review; once a performance is over, it's over, thereby obviating the review's utility as a work of service journalism. Architecture is fortunate in that it is not so ephemeral. A building may be a kind of "performance" in that it is orchestrated over time, but it is also a permanent physical object in the world, one that can be experienced on a regular basis and, for that matter, shapes the experience of its audience in a tactile and meaningful way.

The critic's challenge is to make the audience understand that impact in a compelling and visceral way. This in part explains the evolution of the role of the architecture critic away from a position that looks principally at signature buildings to one that more broadly addresses the built urban environment in all its varied complexities.

For the critic, this means an added sense of empowerment, but one that is commensurate with a growing interest in the role of the design disciplines in shaping everyday life. Curiously, this newfound attention has come at the expense of architecture, the mother design discipline. As more and more focus is directed at issues of urban equity (gentrification, parks, mobility), architecture can be portrayed as a tool and plaything of the wealthy, which it sometimes is. You can see this shift in your local bookstore—if you can find one. Shelf space that once went to architectural monographs is now devoted to books on cities, the progeny of Jane Jacobs.

An expanded purview entails new obligations for the architecture critic. Newspaper critics, who tend not to be journalists and not trained practitioners, generally come to the field with a background in architectural history, the study of great buildings and the men (because it was usually men) who built them. When the job was principally about reviewing buildings, that was fine. But now a broader education is required, one that encompasses urban planning, social policy, landscape, and—yes—architecture.

This knowledge will make the critic an effective voice for the community and also an informed source within the newspaper on issues of urban design. This is more significant than one might at first imagine: a good deal of municipal business is shaped by editorial boards, yet members of these boards are journalists without significant pedagogical training in the complex policy issues on which they are required to write. Even without serving on boards directly, critics can direct those opinions through their own writing or in casual conversation.

While it is right to worry over the death of the newspaper critic in the digital age, it's also worth noting that this is in some ways a golden era of criticism, a field that forever seems to be in crisis. The expanded field of the Internet means

there are more people writing more criticism than ever before, that it is easier for new voices to gain traction, and that every discipline and subdiscipline and sub-subdiscipline can have its own easily accessible forum for ideas.

NEWSPAPER CRITICS GENERALLY COME TO THE FIELD WITH A BACKGROUND IN ARCHITECTURAL HISTORY... NOW A BROADER EDUCATION IS REQUIRED, ONE THAT ENCOMPASSES URBAN PLANNING, SOCIAL POLICY, LANDSCAPE, AND—YES—ARCHITECTURE.

Perhaps the single most important criteria for the critic is evaluating how a certain medium is adapting to, reflecting, and advancing the conditions in which it is created. Criticism itself has rarely had to do this, but now it is facing this dilemma; the critic needs to find new ways to respond to a changing media environment. That's a daunting challenge, but one it would be hypocritical, not to mention self-destructive, not to embrace.

All change entails loss, and the losses in the shift to a digital culture in newsrooms have been deeply painful for the arts. Critics are perhaps not prone to optimism, but there are some corresponding benefits: We're no longer constrained by the limits of the printed page; we can embed photographs and video and audio in our stories; and there are entire new platforms available to us—podcasts, social media, and whatever the next thing to hit might be.

Which brings us back to Fuller. Though there is something essentially naive about his techno-utopianism, he was surely correct in one respect: A failure to reckon proactively with new technologies is a sure route to oblivion. ■

PHOTOS

Shanghai-Lujiazui portion perspective (above left) and New York City-Central Park portion (right). From *Textscapes* (2015), a series by Hongtao Zhou that uses 3D-printed text to form extruded landscapes. Photos: Courtesy of the artist



DÉJÀ BRU

The Milan-based photographer Roberto Conte once remarked on the “persistent repetition of patterns” he noticed as a peculiar and interesting feature of Brutalist designs. Riffing on that idea in the Taste issue of *ArchitectureBoston*, we went in search of high-low pas de deux in the architectural realm. The concept is admittedly cheeky: Take a joint serving food (or shaped like it) and match it up with a building in the Brutalist style. Conte’s work was what inspired us when we noticed that The Donut Hole, a landmark bakery in La Puente, California, eerily echoed the geometry of a 1997 residential building in Novazzano, Switzerland, he had photographed.

We’re not sure this is what Reyner Banham had in mind when he wrote his 1955 seminal essay, “The New Brutalism,” declaring that it “requires that the building should be an immediately apprehensible visual entity, and that the form grasped by the eye should be confirmed by experience of the building in use.” These stark mash-ups, though, might be concrete proof that neo-Brutalism is funnier than Banham could ever have imagined.

—Fiona Luis

***“NOTHING REQUIRES THE ARCHITECT’S
CARE MORE THAN THE DUE
PROPORTIONS OF BUILDINGS.”***

VITRUVIUS





FAR LEFT

Grand Central Water Tower in Midrand, South Africa, 1996, by GAPP Architects & Urban Designers. It is a functional piece of urban sculpture. Photo: Courtesy GAPP Architects

LEFT

The Big Cone in Los Angeles was a Chapman's Ice Cream parlor in the 1930s; architect unknown.



ABOVE LEFT

The Big Pineapple in Woombye, Australia, 1971, by Gary Smallcombe and Associates, Paul Luff, and Peddle Thorp and Harvey. It is a fiberglass building with an observation deck and an audiovisual facility. Photo: Unknown, from a postcard c. 1975

ABOVE RIGHT

Les Choux de Créteil, 1974, by Gerard Grandval, a group of 10 cylindrical residential buildings in the Parisian suburbs. Photo: Andrew Garford Moore

*"IN THE 1960S, ROBERT VENTURI
AND I PLAYED A GAME WE
CALLED 'I CAN LIKE SOMETHING
WORSE THAN YOU CAN LIKE.'"*

DENISE SCOTT BROWN





ABOVE LEFT

A residential building in Novazzano, Switzerland, 1997, by Mario Botta. Photo: © Roberto Conte

ABOVE RIGHT

The Donut Hole in La Puente, California, 1968, by John Tindall, Ed McCreany, and Jesse Hood. Photo: © 2017 Ashok Sinha



ABOVE LEFT

San Giovanni Bono, a church in Milan, 1968, by Arrigo Arrighetti. Photo: Matteo Ceschi

ABOVE RIGHT

The Big Chicken in Marietta, Georgia, 1963, by Hubert Puckett, was originally built to house Johnny Reb's Chick, Chuck and Shake. Since 1974, it has been a KFC. Photo: Ryan MacDonald/Marietta.com

RIGHT

The Burger That Ate LA, in Los Angeles, 1989, by Solberg & Lowe Architects. Photo: David Graham

FAR RIGHT

Budluzdha Monument in Kazanluk, Bulgaria, 1981, by Georgi Stoilov, was built to commemorate the founding of the socialist movement; it was abandoned in 1989. Photo: Ciarán Fahey



*"THERE ARE ONLY FOUR GREAT ARTS:
MUSIC, PAINTING, SCULPTURE,
AND ORNAMENTAL PASTRY—
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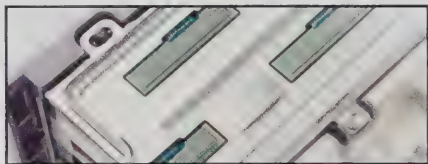
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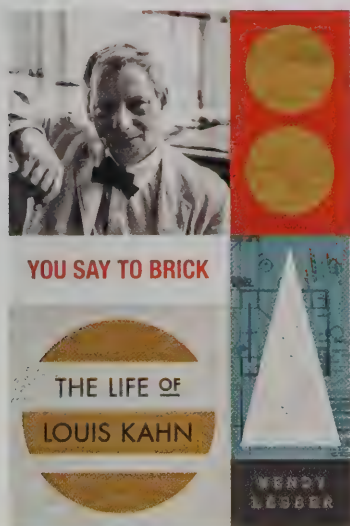
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BOOKS

**You Say to Brick: The Life of Louis Kahn**

Wendy Lesser

Farrar, Strauss and Giroux, 2017

Reviewed by Jay Wickersham FAIA

This eloquent biography of architect Louis Kahn begins with his death from a heart attack in the men's room of New York's Pennsylvania Station, on his return from a trip to India in 1974. Kahn left behind some of the most ennobling spaces of the 20th century: the ocean-facing plaza of the Salk Institute, the luminous vaults of the Kimball Art Museum, the top-lit central halls of the Phillips Exeter Academy Library, and the Bangladesh National Assembly. He also left behind a tangle of family secrets. Lesser describes the memorial service in Philadelphia, where his wife, Esther, and daughter Sue Ann Kahn sat up front. Also in the room were his two hidden families: architect Anne Tyng with their daughter, Alexandra, and landscape architect Harriet Pattison with their son, Nathaniel.

In 2003 Nathaniel Kahn revealed these family secrets in his superb film about his father, *My Architect*. Now Lesser has expanded and deepened the intertwined stories of Kahn's private and artistic lives. Lesser is one of our best cultural critics, the author of essays and books on subjects as diverse as Degas, Shostakovich, and Alfred Hitchcock. She acknowledges her debt to *My Architect*,

but her book gives us a new richness of detail and a wealth of viewpoints and voices.

She provides the first detailed account of Kahn's upbringing, from his birth in a remote Baltic province of Tsarist Russia to his childhood as the artistically gifted son of poor Jewish immigrants in the Philadelphia slums. She portrays his struggles in the 1930s and '40s, when there was very little work for even the most talented architect if he lacked social connections, and when Esther had to give up her own ambition of becoming a psychiatrist to support her husband and family. We see Anne Tyng's formative role in shaping Kahn's approach to design. Most moving of all, we see how his children eventually forged their own relationships with one another, despite Kahn's attempts to keep his three families apart.

Lesser also gives voice to the skilled architects and engineers who sustained Kahn's practice. They were the ones who worked out the innumerable construction details that make his buildings so deeply satisfying and who appeased clients over the delays and cost overruns caused by Kahn's artistic perfectionism. (When Kahn died, Lesser tells us, he left his firm and his widow half a million dollars in debt.)

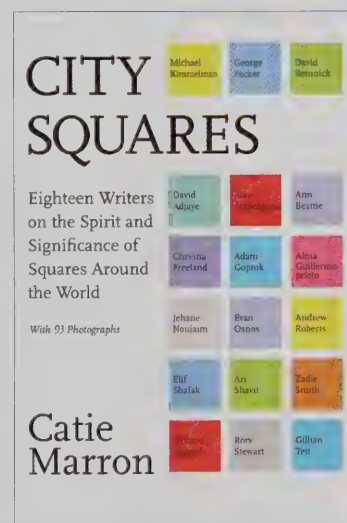
Lesser is not writing a critical analysis of Kahn's architecture. Those books already exist—from Vincent Scully's groundbreaking 1962 monograph through recent works by Sarah Goldhagen and Robert McCarter. She has interspersed her biographical chapters with vivid word portraits of five canonical buildings. Her descriptions convey how a visitor experiences Kahn's spaces, and they contain accounts from the people who live and work there.

This biography gives us the fullness of Kahn's contradictions. Though his face was deeply scarred by a childhood accident, his physical and sexual energy captivated men and women. He was a nonpracticing Jew imbued with a deep spirituality who designed profound

worship spaces for Christians and Muslims. He could be a tender lover and father, but he was ruthless in pursuing his art and heedless of the damage he caused to those around him. And yet they loved him and, most of the time, forgave him.

When I was 15, I was a student at Exeter. For years Kahn's library had been a slow-rising mass of bricks, shrouded in scaffolding. One November day we formed a human chain to pass boxes of books from the old library to the new. It was the first time any of us had entered the majestic atrium, that great implied sphere of space floating within a cube. Kahn's library, more than any building I had ever seen, showed what architecture could be. Lesser's biography conveys the sense of wonder that Kahn's buildings evoke, and the flawed yet inspiring man who brought them into being.

JAY WICKERSHAM FAIA, of the Cambridge, Massachusetts, law firm Noble, Wickersham & Heart, is an architect, lawyer, and president-elect of the Boston Society of Architects/AIA.

**City Squares**

Catie Marron, editor

HarperCollins, 2016

Reviewed by Justin Crane AIA

The months following an election are opportunities to think critically about the places we design and how they

boost or erode our civic culture. In *City Squares*, editor Catie Marron has assembled pieces by 18 contributors (including one architect, David Adjaye FAIA), giving us the chance to do so via a collection of well-written essays that leaves one critical of our democratic society's attitude toward public gathering spaces.

The book is not architectural or plannerly. It is not a how-to manual with comparisons and guidelines, such as Allan Jacobs' *Great Streets*. The photographs do not even have captions identifying squares pictured. Instead, the essays provide the opportunity to absorb descriptions by talented writers—the likes of Michael Kimmelman and Alma Guillermoprieto—of the importance and spirit of a place. Every contributor has been given wide latitude to explore her or his subject. Zadie Smith contrasts her experiences living in Rome's Piazza Della Madonna with being a tourist in Venice's San Marco; Rory Stewart writes of his failed attempts to create a public square in Kabul.

As the arc of the book becomes clear, something more interesting emerges from the curation of the essays. Organized into three broad categories—Culture, Geopolitics, and History—they cover Asia, Africa, the Middle East, Europe, North America, and Latin America. Yet, with the exception of Rabin Square in Israel, the geopolitical section focuses on countries with autocratic regimes, from Tiananmen Square in China to Tahrir Square in Egypt.

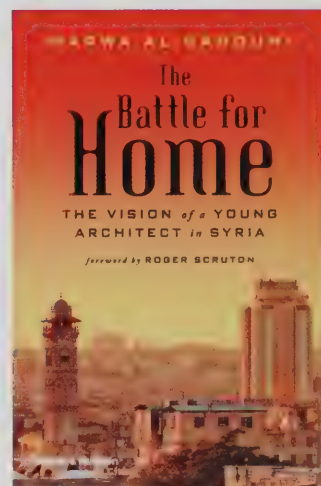
In contrast to these expressly political essays, the tales of squares in Europe and America tend to focus on genteel expressions of culture—finding quiet and shade in Paris' Place des Vosges or sipping coffee in Krakow's Grand Market Square, in Poland. Politics seem to have found expression in these squares only in the past.

Two squares from Anglophone

North America are featured. The first is Harvard Square, which Ann Beattie writes about with a folksy, apolitical appreciation for its quirkiness; the kind of devotion—and forgivingness of faults—locals hold for the landmark spaces in their hometowns. The second is Hacker Square, the open-air courtyard located within Facebook's California headquarters. Gillian Tett contrasts this—a square created by a corporation with the intent of increasing worker productivity—with the virtual squares created by the corporation. Her essay describes a devolution of the public square: As children's freedom to roam through their neighborhoods has diminished, they've taken to the digital world to find independence and opportunities to meet.

The apparent disuse of city squares in North America highlights the importance of George Packer's question in his contribution: "Is there a civic purpose for city squares where people are already free?" He notes that civic life in democracies happens primarily in government offices, courthouses, TV, and social media, yet polls show that estrangement from political institutions in the US is at record levels. Perhaps the decline of public life in public spaces contributes to this. Commitment toward those in our communities who are not already friends requires real face time; few informal spaces exist for such interactions in our built environment. Election cycles and good intentions alone may not be enough to sustain inclusive civic responsibility. We also need spaces where we can meet, interact, and strive. *City Squares* provides a timely opportunity to critically consider the role of these civic open spaces in our diverse, democratic society.

JUSTIN CRANE AIA is an associate at Cambridge Seven Associates.



The Battle for Home:
The Vision of a Young Architect in Syria

Marwa al-Sabouni

Thames & Hudson, 2016

Reviewed by Nasser Rabbat

An architectural memoir about the devastating civil war raging in Syria for the past six years, *The Battle for Home* argues passionately for architecture's pivotal role in shaping social realities. Writing and publishing this book in the current circumstances is in itself a tremendous act of perseverance. Marwa al-Sabouni, a young and ambitious architect still defiantly living in her severely destroyed city of Homs with her husband and two children, uses her own autobiography and architectural sensibility to tell a selective history of her native city, and of Syria more generally, down to the excruciating present.

The story is woven around her direct encounters with architecture, old and new, in Homs mostly but also in Damascus and Aleppo, and her rather limited exposure to world architecture. It has a strong phenomenological bent (although the term seems to be unknown to al-Sabouni), and an even a stronger architectural and social moral that extends to reflecting on famous architects, such as Hassan Fathy or Le Corbusier, and essential conceptual terms, such as vernacular or Islamic architecture.

The gist of the book is refreshingly, albeit naively, idealistic, comparing a

romanticized past of socially cohesive communities living in organically evolved cities to a present plagued by corruption, hatred, ignorance, and—the wickedness that the author would not name—sectarianism.

Al-Sabouni starts with a conciliatory stance, praising the imagined past of Syria where communities ostensibly lived together in harmony. But by the middle of the book—when she discusses the tragic fate of Baba Amr, the rebellious quarter in Homs that was leveled in the regime's brutal retaliation—she cannot help but criticize the differential treatment of various sects by the regime and the vengeful punishment reserved in particular for the Sunnis, collectively identified with the uprising. Still, al-Sabouni tries to preserve an air of impartiality, blaming all sides for the destruction of the country, even if she slyly notes the vaster harm caused by air raids, used

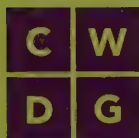
exclusively by the regime.

The book is divided into six chapters, each cast as a battle with one of several facets of what is in the end the same enemy: predatory change motivated by greed, bad taste, and misguided Modernism. That detrimental change—which left huge swaths of economic inequality, urban underdevelopment, and ethical privation—directly contributed to the breakdown of Syrian society. However, al-Sabouni's distrust of Modernism as it seeped into the traditional built environment is not surprising. It is both a topos that is frequently invoked in writing about the disfigurement of colonial cities and a reflection of her being influenced by the traditionalist philosopher Roger Scruton, who is one of the few sources cited in the book and who also contributed its admiring foreword.

Al-Sabouni's ink sketches in freestyle both illustrate her arguments and subtly

push them further. For instance, she uses thick lines in depicting an urban redevelopment proposed by the authorities after the destruction of Baba Amr, which emphasizes the brutality of the intervention. Her own clever project for the same reconstruction, inspired by an organicist reading of traditional architecture, is rendered with various thicknesses that enhance its spatial complexity. A softer touch is reserved for the historical and vernacular examples that al-Sabouni favors. A more attentive editor would have corrected mistakes, such as claiming that the Alawi faith has no link to any Abrahamic religion, calling Michel Écochard a military pilot, or spelling Moshe Safdie's name Moshî Safadi, as if transliterated from Arabic.

NASSER RABBAT is the director of the Aga Khan Program for Islamic Architecture in the Department of Architecture at the Massachusetts Institute of Technology.



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EYE OF THE BEHOLDER

by David Huang

Here's what I've long suspected: Our education and experiences as architects have left us out of touch with what the general public thinks about architecture. Take, for example, the Korean Church of Boston in Brookline. It's among my favorite local buildings. It won a 2008 Progressive Architecture Award and was a finalist for the 2016 Harleston Parker Medal. The community reaction, however, was scathing. In a series of letters published on wickedlocal.com, neighbors pointed out that the "big gray box" facing Harvard Street was monolithic, cold, and out of context with Brookline Village and the adjoining traditional church—"like a stereo speaker in a room full of antique furniture." It was a fair point: I had been so enamoured with the building's sleek contemporary style I hadn't even considered the view from the street.

To discover how far my values were disconnected from those of general

viewers, in 2011 I surveyed 26 non-architects, asking them to name their favorite and least favorite buildings in Greater Boston and rate nine local award-winning buildings. It was hardly scientific, but the results were revealing.

There were areas of agreement: Respondents admired natural light, windows and views, connectivity and spaciousness, a balance of open and private spaces, interesting colors and finishes, and the integration of landscape and nature. Architects I've known and worked with value these things, too.

On contemporary architecture, respondents themselves were divided. Frank Gehry's Stata Center was chosen as both the most liked and most hated building. I was surprised to learn that many found contemporary forms confusing and disconcerting: butterfly roofs, solid upper volumes floating on glass, daring structural moves. Similarly, industrial aesthetic, minimalism, and pure geometric massing often evoked science fiction totalitarianism. I had to laugh at the unflattering metaphors people came up with: "Death Star" (One Boston Place), "Borg cube" (Simmons Hall at MIT), and "cancer," "wart," and "vomit" for the much-maligned Korean

Church addition. Respondents perceived overly generous spaces and unconventional forms as wasteful and expensive, especially in publicly funded buildings, and criticized designs for not prioritizing ease of maintenance, durability, and occupant comfort.

Like many architects, I learned to deeply esteem the early Modernists like Le Corbusier, Terragni, and Mies. I studied them in depth in college and made pilgrimages to their buildings. And I'll occasionally appreciate a pre-Modern building, too—assuming I even notice it!

The majority of laypeople in my small survey felt the precise opposite. They passionately hate midcentury Modernism and view monumentally scaled concrete buildings like Boston City Hall as just plain ugly. Instead, they expressed a deep affection for anything elaborately detailed and historical. Favorite local buildings included the Christian Science Church, Museum of Fine Arts, Trinity Church, the Boston Public Library, even the Smith and Wollensky "castle" on Arlington Street. You can stop rolling your eyes now!

Once we acknowledge this disconnect, what can we do about it? There are ways to help people better relate to our work. We can do more to explain our designs in practical, jargon-free terms that the public can relate to, such as cost, efficiency, comfort, and function. We can pay more attention to referencing the historical context of which our buildings are a part. We can take a moment to see through the eyes of others and remind ourselves to take their values more seriously in our design process.

This doesn't mean we should only do the expected and conventional. Architects play a crucial role in innovating built forms and elevating society's vision. But I hope we'll never forget to spare a thought for those who will gaze upon and use our buildings long after we've moved on. ■

LEFT

Mirrored Cut Cabinet, Rolf Bruggink. From "Cut Furniture," a 2008–16 series that splices family heirlooms with contemporary forms
Image: Courtesy Studio Rolf.fr





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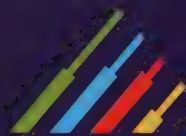
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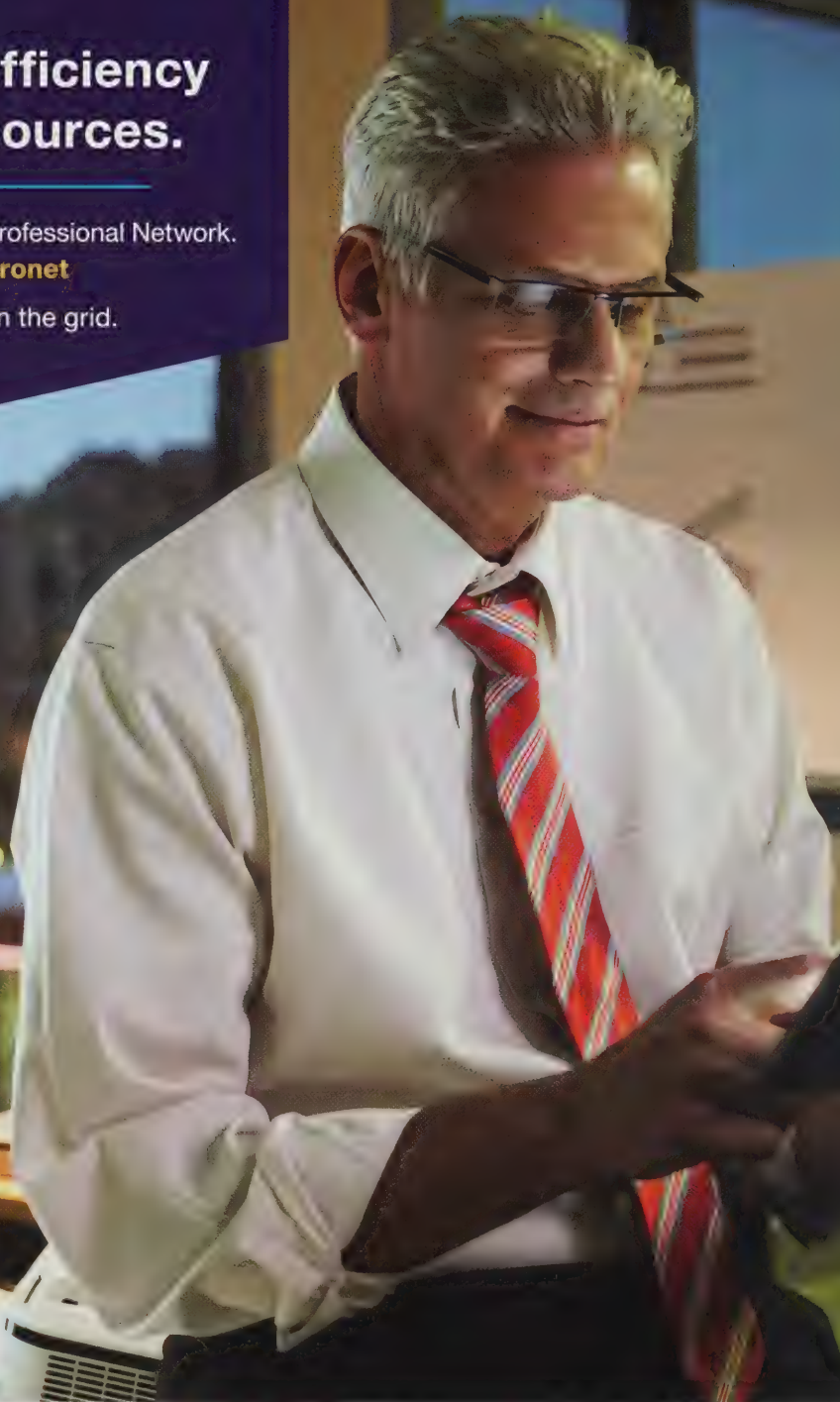
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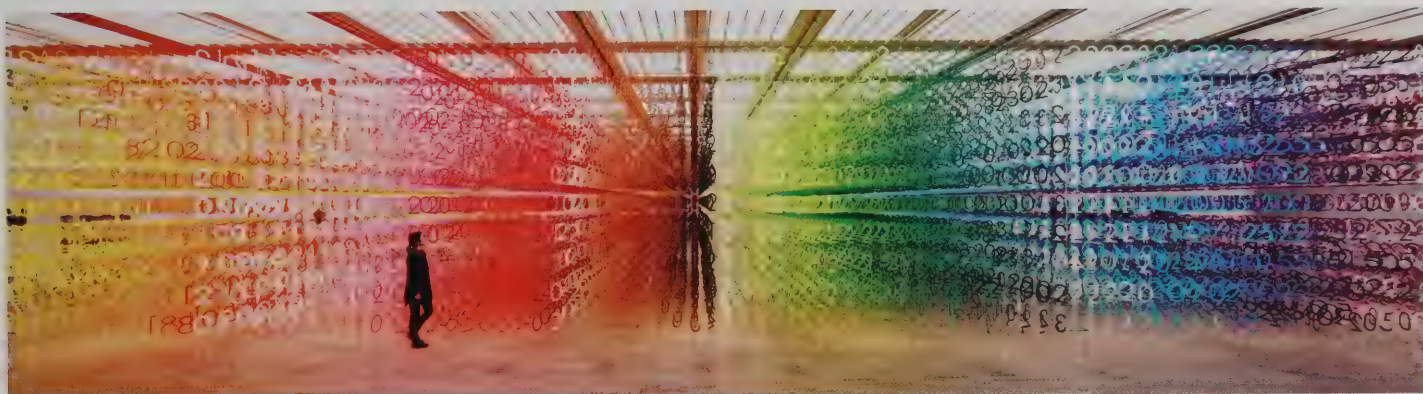
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ABOVE

Forest of Numbers, by Emmanuelle Moureaux, 2017. Paper and thread; for the 10th anniversary of The National Art Center, Tokyo. More than 60,000 suspended numerals were aligned in three-dimensional grids, then a section was removed, creating a path through the installation. Photo: Daisuke Shima



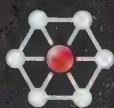
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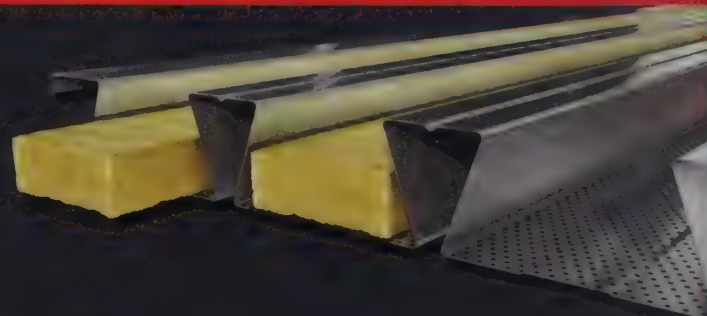
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ONE SCORE

First, let's synchronize our calendars. The debut issue of *ArchitectureBoston* was published in June 1998, so purists might argue the magazine's 20th birthday isn't for nine months yet. But we are already deep into the 20th year of publication: The issue you hold in your hands is Volume 20, number 3. So we're breaking out the birthday cake now.

From its first issue, *ArchitectureBoston* has been one of a kind—not a commercial “shelter” magazine, not a membership newsletter, not a trade journal, but a true publication of ideas about design and society. Our themes have run the gamut from the tangible (housing, preservation, materials) to the abstract (memory, time, night). As some of the magazine's founders recall in “Present at the creation” (page 24), we have provoked and deepened a community conversation about issues global (climate change) and local (City Hall Plaza). We have published commentary by Pulitzer Prize-winning critics and AIA Gold Medal recipients, former governors, and current mayors. And we've only just begun.

Fixing the lens on a single year may seem arbitrary, but it allows us to see how far the design field has come in a short time. Among other firsts in 1997: The American Institute of Architects held its first conference on universal design and accessibility. Frank Gehry's Guggenheim Bilbao opened, demonstrating the sculptural innovations made possible by the computer. Norman Foster designed one of the first “green” skyscrapers, a bank tower in Frankfurt with an operable façade that allowed tenants to control light, ventilation, and temperature. The design philosophy of New Urbanism began its evangelizing;

the planned community of Celebration, Florida, observed its first anniversary.

We can also see the outsized influence of Boston on the world. The Moakley federal courthouse, designed by Harry Cobb, neared completion in 1997, prompting *Architect* magazine to proclaim “a golden age of federal architecture.” Ted Landsmark became president of the National Organization of Minority Architects. *The Boston Globe's* critic Robert Campbell was named architect-in-residence at the American Academy in Rome. Moshe Safdie started work on the Yad Vashem memorial in Jerusalem.

Of course, these select events don't begin to capture the special community that is Greater Boston, a place big enough to matter and small enough for an individual to make a difference. Sure, we have our share of the boxy and the banal, and not always friendly competition for the best commissions. But only in a city like Boston—brainy, compact, resourceful, committed to the wider world—would a magazine like this even be possible.

When the great *New York Times* critic Ada Louise Huxtable died four years ago, one tribute described her writing about architecture as “a mix of aesthetics and public policy, art and advocacy, technology and politics.” At the risk of grandiose comparison, that's the way I think about this magazine. Huxtable's accessible, informed commentary helped shape the city she loved. So, too, do we at *ArchitectureBoston* call out the best ideas in a city teeming with them. And we go further, layering on the views of practitioners, allied professionals, journalists, activists, and just lovers of good design—all packaged in a singular, beautiful object to be savored slowly or consumed in one delicious binge.

Birthdays are a time for wishes, and mine envision a robust future for *ArchitectureBoston*, both in print and online, with a rich, broadly viewed selection of articles, videos, discussions, and all the other as-yet-unimagined ways we can tell architecture's story. We will be distributed not just in New England but nationwide, our ideas debated by an even more influential audience. We may not have the resources for all of those dreams quite yet. But with your support, *ArchitectureBoston* will continue to be a rare and valuable gift—this year, and every year. ■

Renée Loth HON. BSA
Editor



Photo: Ben Gebro



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BEST OF BOSTON HOME 2017, 2016, 2015, 2012, 2011, 2010, 2008 / BEST OF BOSTON 2017, 2007

ON “TASTE” (SUMMER 2017)

As an architect who has practiced and taught in Boston for more than 20 years, I have watched the urban realm evolve physically, socially, culturally, and politically. However, I have also observed that the built environment in our city often remains unchallenged as a space where community can flourish, in which the architect's craft can inspire individuals from all backgrounds and cultures, and encourage new paradigms of engagement. The abstract concept of beauty in the built environment, recognized once a year with the bestowing of the Harleston Parker Medal on a single architectural project, offers a rich opportunity to encourage, and even inspire, public engagement.

As Christina Crawford conveys in “In an Extraordinary Space,” the history and selection process of the Harleston Parker Medal has always been a complex undertaking, charged with the responsibility of measuring beauty in the built environment as a physical, philosophical, and, ultimately, transient condition. Architecture is, by nature, a reflection of its time, as compellingly illustrated here by nearly a century of controversial winners. And the criteria for beauty continue to evolve as public space transforms from physical to digital. In this new social realm, will the criteria become trivialized, and true opportunities for public engagement lost?

This selection process, in which I am honored to participate this year, is an opportunity to engage with my peers from varied professional walks of life and to wrestle with identifying criteria for beauty in a politically uncertain and, dare I say, confrontational time. The task is daunting but has also sparked my sense of optimism. Although the process of deliberation and selection will, indeed, be a democratic one, complete with the ebb and flow of debate and deliberation, it represents for me more

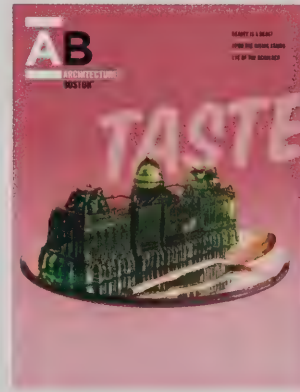
than a collaborative means to the outcome. The award can transcend bestowing an honor on a singular building. It can invite citizens to continue the debate around beauty at all scales of the work.

At no other moment in my professional life have I felt this level of responsibility to engage in the political terrain of architecture, one that presents itself as more than a superficial sound bite. As I make my selection of the top four candidates for the most beautiful building of 2017, I am optimistic that the winning work will incite discourse and invite all—citizens and designers—to revel in this sublime moment in time. After all, beauty is more than skin deep.

ANNE-SOPHIE DIVENYI AIA
Senior Capital Project Manager,
Harvard University
Cambridge, Massachusetts

The essence of the rich discussion in “Beauty is a beast” is really a series of meditations on beauty and its perception. I was particularly struck by the dialogue on the meaning of symmetry that enlivens the incisive conversation between Mark Pasnik and Elaine Scarry. Is symmetry to be taken literally—bilaterally, by common definition—or can we interpret what Indra McEwen calls the “appearance of symmetry” (what Vitruvius called “eurhythmy,”) to include the kind of dynamic asymmetric balance found in much of the best Modern architecture?

Vitruvius equates eurhythmy with “shapeliness... an attractive appearance and coherent aspect in the composition of elements.” At the dawn of modernity, the French architect Claude Perrault discarded the ancient cosmological proportional criteria, declaring that the human mind determines beauty, and found symmetry to be a component part



of a construct that equates eurhythmy and proportion. The Oxford English Dictionary defines eurhythmy as “harmony in the proportion of a building” but also “rhythmical order or movement,” tying it back to qualities of active human perception. To me, this is a term that can perhaps better describe the importance of proportion and balance—absent strict bilateral symmetry—to the creation of beauty.

We design without cognizance of the power of beauty and the extraordinary effort often needed for its achievement at our peril. I once saw a catamaran docked at a marina on Cape Cod whose exquisite design and execution provoked an immediate, visceral reaction that renewed my faith in the sublime, transformative power of human creativity. Tragically, the owner confessed that this was all he had left—the realization of his dream had cost him 12 years of his life, his fortune, and his marriage. It was a hard lesson on the difficulty of achieving beauty at this level—and on the cost of perfection. Perhaps this is why we don't see it more often—but we should never stop trying.

DAVID N. FIXLER FAIA
Principal, Architecture Planning
Preservation
Weston, Massachusetts

Thank you for Mark Lamster's insightful piece, “Informed sources: Architectural criticism in the digital era.” As Lamster correctly observes, those who predict that the digital age has doomed criticism

are false prophets. The field is changing, not dying, as digital media enable new ways for critics to inform readers and broaden critics' reach far beyond old geographic boundaries. In the same vein, his analysis implies that at the very time critics' audiences are expanding, the scope of their subject matter is widening. Indeed, the term "architecture critic" may now be a misnomer—or, at least, not inclusive enough to encompass concerns ranging from landscape architecture to rising seas. To be sure, there are new opportunities for relevance in the exploration of these related fields. Yet such adventures also pose challenges. Do we know the territory—and the traps—when we range beyond the discipline of brick, mortar, steel, and glass?

In my view, this broadening of critics' readership and mission is ultimately to the good. It makes architecture more democratic and less hermetic. At the same time, any discussion of a critic's worth invariably will return to a narrower issue suggested by the Greek root word for "critic"—*kritikos*, meaning "skilled in judgment." As I wrote in my own recent assessment of the field ("Architecture Criticism: Dead or Alive?") "What a critic writes, what impact he or she has on architectural dialogue, is more important than how many clicks he gets or how many followers she attracts. While the means of delivering criticism should change in response to new media realities, the essential purposes of criticism—separating the meritorious from the mediocre, monitoring the shapers of our built world, and illuminating architecture's powerful effect on human experience—must remain unchanged."

BLAIR KAMIN
Architecture critic
Chicago Tribune

What captured me about the article by Henry Scollard AIA ("An idyll to the King") was the statement that Elvis Presley's home had "very little kitsch"

within. Scollard expects that readers of *ArchitectureBoston* think of Presley's material legacy and Graceland itself as bound by tackiness, *passé* style, and bad taste—perhaps the essence of 20th-century kitsch—and I wonder if this isn't true. Scollard is attempting to relax readers' hackles in regard to taste and instead consider the expression that one can project with a designed space.

He shows us that the personality of the King is on full view and that Elvis personalized his space with the same passion and creativity as his life in entertainment. In expressing an appreciation for this maximalist aesthetic, Scollard reinforces a position against Modernism but more intentionally promotes that we acknowledge the meaning, memory, and delight of our material existence. He reminds us that space intrinsically communicates, but the biggest lesson is to prize the designer's role as an instigator of possibilities. I am left to wonder: Do enough designers consider themselves entertainers?

JEFFREY LECLAIR AIA
Architect, Bruner/Cott & Associates
Cambridge, Massachusetts

The appeal of Elvis Presley's Graceland must be in the eye of the beholder ("An idyll to the King," by Henry Scollard AIA). When visiting there some 10 years ago, the front with columns was dinky-looking and the rooms were straight out of 1950s mediocre, with a couple or so ornaments—maybe awards. What struck my daughter and me was how modest it was; we admired that. We also visited his birthplace in Tupelo, Mississippi. Modest? You bet. A railroad shack.

Thanks for a great issue of *ArchitectureBoston*.

ANN HERSHFANG HON. BSA/AIA
Founder and former president,
WalkBoston
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EDITOR

Renée Loth HON. BSA · rloth@architects.org

DEPUTY EDITOR

Fiona Luis · fluis@architects.org

CONTRIBUTING PHOTOGRAPHERS

Steve Rosenthal, Peter Vanderwarker

CONTRIBUTING EDITORS

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ARCHITECTUREBOSTON:

20 YEARS

OF INSPIRATION

IN THIS ISSUE

ArchitectureBoston founders

(From left to right)



Photo: Michael Kuttner

Left to right:

Peter Kuttner FAIA is a principal at Cambridge Seven Associates. He was president of the Boston Society of Architects/AIA when the first issue of *ArchitectureBoston* was launched in 1998.

Nancy Jenner HON. BSA is a senior associate at Minelli, Inc. She was deputy director of the Boston Society of Architects/AIA and founding publisher of the magazine.

Richard Fitzgerald HON. BSA was executive director of the Boston Society of Architects/AIA from 1984 to 2008, and presided over the magazine's founding.

Elizabeth S. Padjen FAIA is an architect and writer. She is the founding editor of *ArchitectureBoston* and served in that position from 1998 to 2011.

Wilson F. Pollock FAIA was a founding principal of ADD, Inc. He was the first chairman of the magazine's advisory editorial board.

Gretchen (Schneider) Rabinkin AIA is executive director of the Boston Society of Landscape Architects. She was deputy editor of the magazine from 2008 to 2013 and is a frequent contributor.

Not pictured: **Judy Kohn**, the magazine's first art director.

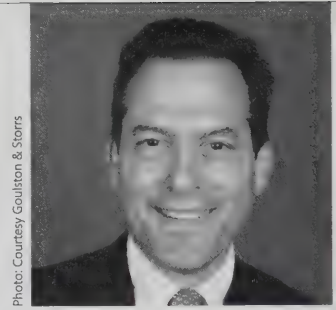


Photo: Courtesy Goulston & Storrs

Matthew J. Kiefer HON. BSA ("20/20 hindsight," page 36) is a land use attorney at Goulston & Storrs, focusing on complex urban projects. A Boston resident, he is deeply involved in open space, historic preservation, land use policy reform, and other civic initiatives. He has taught in the urban planning programs at MIT and Harvard.

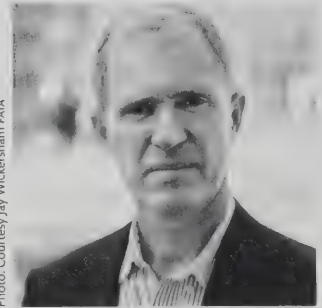


Photo: Courtesy Jay Wickersham FAIA

Jay Wickersham FAIA ("Brave new practice" page 40), an architect and lawyer, represents design firms in projects worldwide with the Cambridge, Massachusetts, law firm Noble, Wickersham & Heart. He is the president-elect of the Boston Society of Architects/AIA.

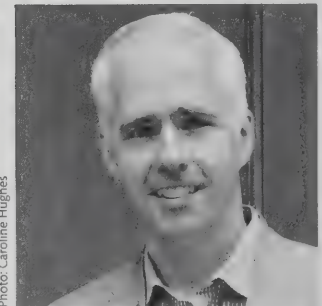


Photo: Caroline Hughes

Jim Stanislaski AIA ("My back pages" page 72) is an architect at Gensler and leads its regional design resiliency group. He is a member of the Massachusetts AIA board and has served on several research panels for the National Academies of Sciences, Engineering, and Medicine.



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UNSTRUCTURED

Opinions and Observations



MASS MoCA: The opening of Building 6

North Adams, Massachusetts

Several years ago, MASS MoCA entered into a novel 25-year agreement with the Sol LeWitt Foundation to have volunteers draw, paint, and crayon hundreds of his works, per LeWitt's loopy instructions, on walls in a new wing of the museum. Building on that long-term exhibition approach, MASS MoCA has now doubled its already staggering size—adding 130,000 square feet of space. In this phase of its continuing renovation of the 28-building campus, Bruner/Cott & Associates has transformed a beautiful old mill building with lovely patinaed surfaces into a beautiful old mill building still with lovely patinaed surfaces—but now with heat and some amazing art, too. This expansion of Building 6 seamlessly lengthens the museumgoer's experience by creating a long, sinewy loop.

The newly opened wing provides long-term gallery space to such artists as Louise Bourgeois and Robert Rauschenberg; for artists who are still actively working, exhibitions can change from time to time, giving them the opportunity to experiment in the public eye. Laurie Anderson, who will be in residence for 15 years, is immersed in virtual reality, staging works that are wildly innovative and musically lush. You will have an experience that's better than your best flying dream; Piranesi would be jealous of the amplitude of this space. At Gunnar Schonbeck's exhibit—a collection of more than a thousand musical instruments hand made over 50 years by the Bennington College music professor—the public is invited to whale away

on drums made of aircraft fuselages, hammer on the 8-foot-tall marimba, and pluck the 9-foot-long banjo. Bring the kids! Wander, too, through the ethereal spaces of James Turrell's light sculptures, each representing a specific period of his career. Jenny Holzer brilliantly fuses her playful imagination with the existing architecture, projecting a 400-foot-long group of text onto the exterior of the three-story post-and-beam building.

Bruner/Cott's love of old mill buildings and budget realities have ensured that much of the original 19th-century brick structure has been left untouched (although 5,000 original bricks were removed, cleaned, and reused). When the architects removed a floor to create high spaces, their solution was often to leave the top four feet of the upper-floor columns intact, bring a cable down from one side of the room under the column and then back up to the far side of the room, creating an upside-down triangular truss, which—like the museum as a whole—is innovative, practical, and beautiful.

ANN KIDSTON MCCALLUM FAIA is a principal at Burr and McCallum Architects in Williamstown, Massachusetts.

ABOVE

The new prow construction of Building 6 at the Massachusetts Museum of Contemporary Art, North Adams. Photo: Douglas Mason

Ocean Liners: Glamour, Speed, and Style

Peabody Essex Museum

Salem, Massachusetts

Through October 9, 2017

"When aboard ship," wrote industrial designer Norman Bel Geddes in 1932, "you have seen better modern architecture than you have ashore."

This expansive exhibition sails along with the giddy delight of a besotted vacationer. Much of the show details décor, as the ships, appealing to the tastes of customers from the mid-19th century to the late 20th, adorned dining rooms and cabins in Beaux-Arts, Art Nouveau, or Art Deco style.

Shipping companies co-opted trendy designs. Modernists, in turn, co-opted ideas from the ships, and this show explores that give-and-take. When modern architects stepped aboard, they ignored the curlicues, classical references, and nature motifs inside, and marveled over the sleek industrial designs outside.

Le Corbusier, who favored sea travel, called ocean liners "a liberation from cursed enslavement to the past." On one transatlantic voyage, he strolled about photographing air intake cowl and winches, but opted not to document the luxurious interiors, where décor was still slave to history.

It wasn't only the functional designs that grabbed him. He noticed how even first-class passengers put up with small-scale accommodations because so much was available outside the cabins—shops, public spaces, amenities. He followed that template when designing Unité d'Habitation, his Marseille housing project. Even certain architectural elements—ventilation stacks, ribbon windows—echo those of an ocean liner.

Maritime designs started popping up elsewhere on land. Robert V. Derrah's Coca-Cola Bottling Plant in Los Angeles looks like a ship.

Ocean liners in many ways symbolized the modern era. Models of propellers and engines in this exhibition echo the Museum of Modern Art's seminal

Machine Art show in 1934. But nobody ever built a purely Modernist ship.

Bel Geddes designed one—a teardrop-shaped beauty. The model is on view here. It never came to be. Modern designs aimed for a utopian ideal, but for ship passengers, the ideal was opulence, and they got what they paid for.

CATE MCQUAID is a freelance writer. She covers galleries for *The Boston Globe*.

BELOW

Paquebot Paris, by Charles Demuth, 1921–22. Oil on canvas. Columbus Museum of Art, Ohio. Image: © Columbus Museum of Art





SEEN

The 9/11 Memorial, New York City

Sixteen years ago, I took photographs of the awful remains of this area: fine gray dust blanketed everything, and the smell of disaster lingered in the air. It is inspiring to witness New York City's transformation since September 11th.

This view is from the 45th floor of a new hotel just a block south of the site, shot this past May at dawn (no cars). Yes, that is the Empire State Building uptown at 34th Street, looking tiny (wide-angle lens). But the best thing about this view is what you cannot see: the World Trade Center Transportation Hub, hidden underground. What a feat. It connects six subway stops, the PATH trains to New Jersey, a huge shopping arcade, and a stunning PATH station—all underground and protected from the elements. It extends to the Hudson River, where Pumphouse Park sits next to a boat basin, a ferry terminal, and Brookfield Place, another shopping center.

The centerpiece of the hub is the Oculus, by Santiago Calatrava: a bit of its white skeleton peeks out at the lower right center of the photograph. Critics have had their day with this building, but heavens, it keeps the rain and snow away. As a former NYC worker bee, I think the project is a gift to the thousands who travel to work in or around lower Manhattan and can now walk in a quiet, warm, car-free, pedestrian space.

This view shores up my faith in the resilience, creativity, and importance of cities. Read *Climate of Hope* by Michael Bloomberg and Carl Pope; you will stand up and cheer.

PETER VANDERWARKER's architectural photography has been published internationally.



GENIUS LOCI

Salem Common

When it comes to the idea of genius loci, I need to be very careful. *Spirit* is a loaded word in my hometown. Salem, Massachusetts, is perhaps known first and foremost as home to the witch trials of 1692, which marked their 325th anniversary this summer. This dark period has spawned a culture of kitsch—witches, haunted houses, and T-shirt boutiques—that often overshadows Salem’s rich history of maritime trade, American revolutionary history, art, and culture.

At the intersection of kitsch and history resides a space not uncommon across New England: the town common. Salem Common lies just outside downtown and, as with most small towns in our region, is the heart of the city. If, as our Roman ancestors believed, a genius loci is the protective spirit of a place, where else would these spirits hold dominion but within and around town commons? Imagine spirits sheltered within the embedded landscapes that pepper the towns of New England, keeping watch over our daily lives.

Originally grazing land designated for commoners’ livestock, or collection of firewood and turf, our commons have evolved. In Salem, the common embraces the kitsch: It is the terminus of the annual parade that launches our October season and host to our monthlong Halloween festival. But it is also home to seasonal rituals: Santa’s arrival to the roof of the neighboring Hawthorne Hotel each December; the first muster commemoration, this year celebrating the 380th anniversary of the first military muster in the American colonies; the Witches’ Cup bike race, during which elite cyclists hurtle around the turns at breakneck speed; beer and wine, food,

and ice cream festivals. Families use this space as an extended backyard for picnics, reunions, and weddings.

In our pedestrian-friendly city, it has a gravitational field of its own. Whether it is simply to take a turn around the common, pause at the playground, throw a Frisbee, walk a dog, or as part of a run (the loop is almost exactly a half-mile, convenient for keeping track of distance), Salem Common is a touchstone. Our family walks always end up at the common, as if there were some centripetal force drawing us to it. After a pause, however long or brief, the centrifugal force spins you back into the city along some tangent.

To borrow from Louis Kahn, much like the street, the common is a “room by agreement.” It is a shared space, open to all. It does not judge, exclude, or marginalize. It has remained truly common. Lewis Mumford said, “Forget the damned motor car and build the cities for lovers and friends.” I don’t think that our protective spirits have the motor car in mind, either. When you next drive by your town common, pause, park, and join the room by agreement. Take a walk with a friend.

RICHARD JONES AIA is the founder and director of Jones Architecture, Inc., in Salem, Massachusetts.

ABOVE

A fog-shrouded walkway in Salem Common, 2014.
Photo: Jeff Folger

CONSIDERED

Mien of steel

Two new, elegant, ferro-vitreous structures in Maine and Rhode Island remind us of the power of Modernism done well.

It is especially encouraging to see unabashedly rationalist aesthetics at a time when it seems almost every new building is wrapped in a brick veneer and decorated with plastic dormers and cute historicist details. By paying homage to the legacy of no-nonsense Yankee construction, the weight-training center at Bryant University in Smithfield, Rhode Island, by Sasaki Associates, and the Center for Maine Contemporary Art in Rockland, by Toshiko Mori, are welcome antidotes to the preponderance of the built awfulness around us.

These refreshing and rigorous architectural gems were designed by firms with impeccable Modern credentials, by architects who haven't forgotten the lesson of the grid in space making. Both buildings displace 10,000 square feet or so; the gym cost \$4.7 million, the museum a little less.

With its exposed tectonic elements and broad expanses of glass, the palace of grunt is decidedly Miesian. Yet the university that was recently elevated to Division One athletics seeks excellence through sports rather than the artistic achievement. Bryant might have opted for a crowd-pleasing style, such as the flaccid faux-Georgian of Robert A.M. Stern's gym at nearby Brown. But Sasaki chose, dare we say it, a masculine manifestation of its mission to fashion buff jocks who will win more games. The workout machinery in the otherwise unadorned interior recalls the repetitive rhythm and poetry of a 19th-century Rhode Island spinning mill.

The front of the Rockland museum has glass walls and a welcoming civic space of a courtyard. Yet the closed aspect of the rear of this corrugated metal box appropriates the gritty activity and spirit of a working waterfront, with its wharfs and warehouses, rusting equipment and squawking gulls. Unseen as it is, the back of the building needs no other articulation than its material and its dimensions—as honest and functional as a Shaker barn.

New England's traditional materials of wood and brick may be more picturesque, but there's much to be said for steel as a regional signature.

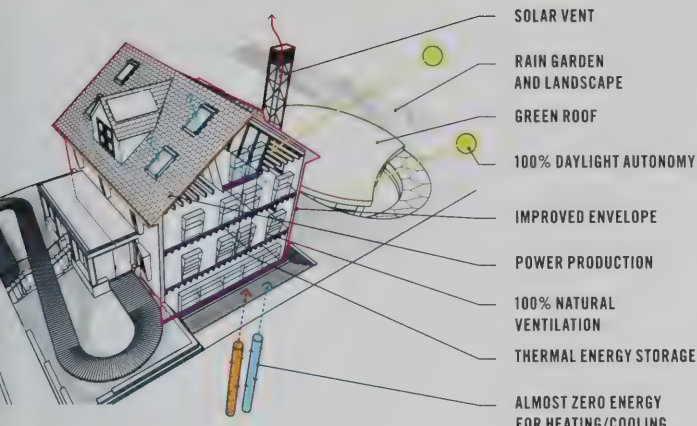
WILLIAM MORGAN is a Providence-based architectural writer and photographer.



TOP
Bryant University
Bulldog Strength and
Conditioning Center,
Smithfield, Rhode
Island. Sasaki and
Associates, 2016.



BOTTOM
Center for Maine
Contemporary Art,
Rockland, Maine.
Toshiko Mori
Architect, 2016.



HouseZero

20 Sumner Road, Cambridge, Massachusetts

Touring the construction site of HouseZero, an experimental sustainable retrofit project and the future home of the Harvard Center for Green Buildings and Cities (CGBC), I was struck by the incongruence between the project's lofty goals and the entirely ordinary appearance of the building during demolition. This is a typical early-20th-century wood-framed house: rough-sawn lumber with striped plaster stains on the studs, brick fire blocking, diagonal corner braces, and a central chimney buried within the walls.

Working with Snøhetta, the CGBC is retrofitting this unassuming building with a web of data-collecting sensors and actuators, high-mass concrete floors, ground-source heat pumps, a solar chimney, and other features. According to extensive energy modeling, HouseZero—with its photovoltaic shingled roof—will be energy positive and will achieve zero carbon during its 60-year life cycle, offsetting the embodied energy of its materials and construction.

These are laudable goals, particularly for a renovation project conducted almost entirely within the shell of an existing building. Yet Ali Malkawi, founding director of the center, talks about net-zero carbon as if it were merely a side effect. The real goal of the project is to harness computational intelligence to revitalize, recombine, and intensify the impact of known passive heating and cooling strategies. Heat will be transferred in precise quantities, stored in the mass of the building, and released as needed. Sensors will be able to measure wind, temperature, and solar gain, and produce real-time dynamic energy models that will inform automated systems. Weather data combined with predictive algorithms will tune the building to anticipate future conditions.

If successful, our understanding of the capacity of passive may well be transformed by this modestly scaled building and its active computations. This is not a superinsulated sealed box, but a building that breathes with yogic discipline.

CARL SOLANDER AIA is the founding principal of Reverse Architecture and a Certified Passive House Consultant.

ABOVE

HouseZero diagram. Image: Courtesy Snøhetta

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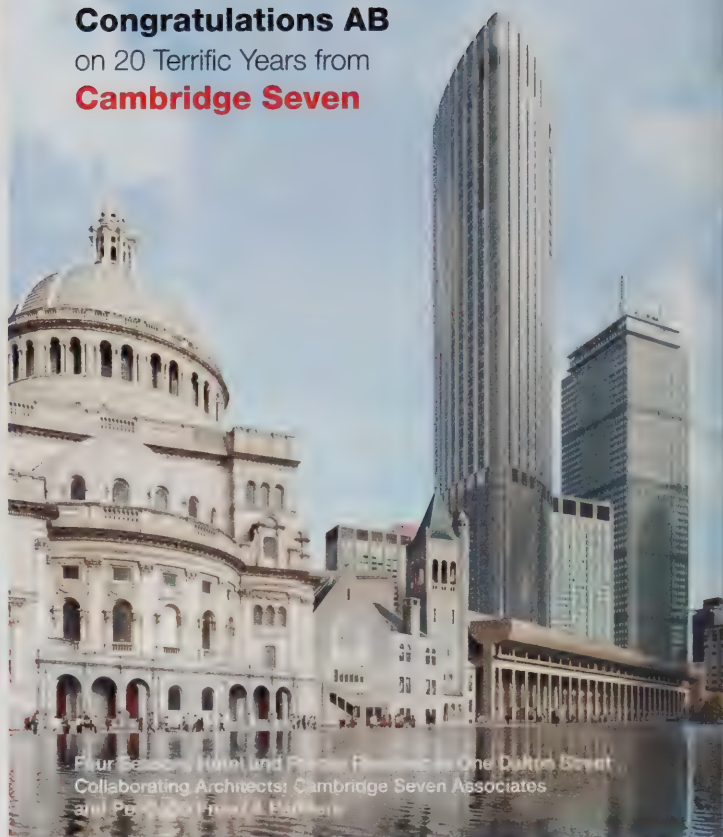
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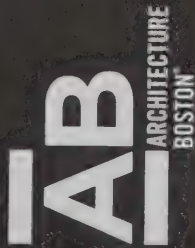
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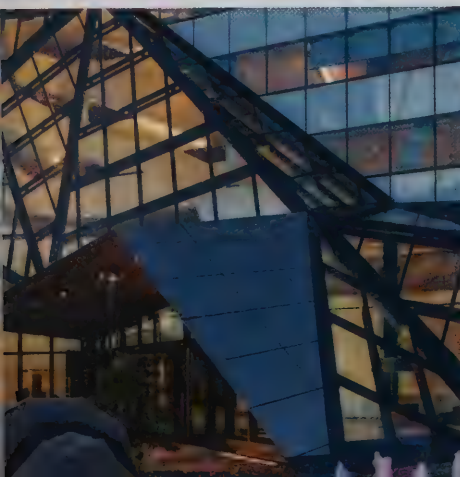
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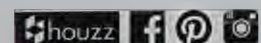
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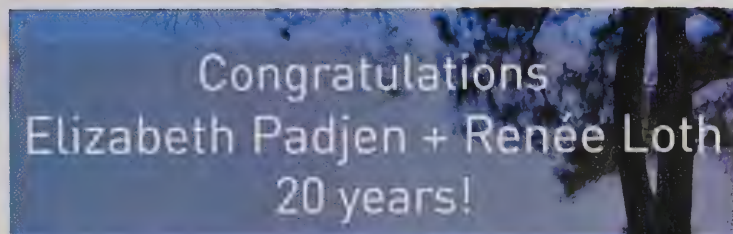

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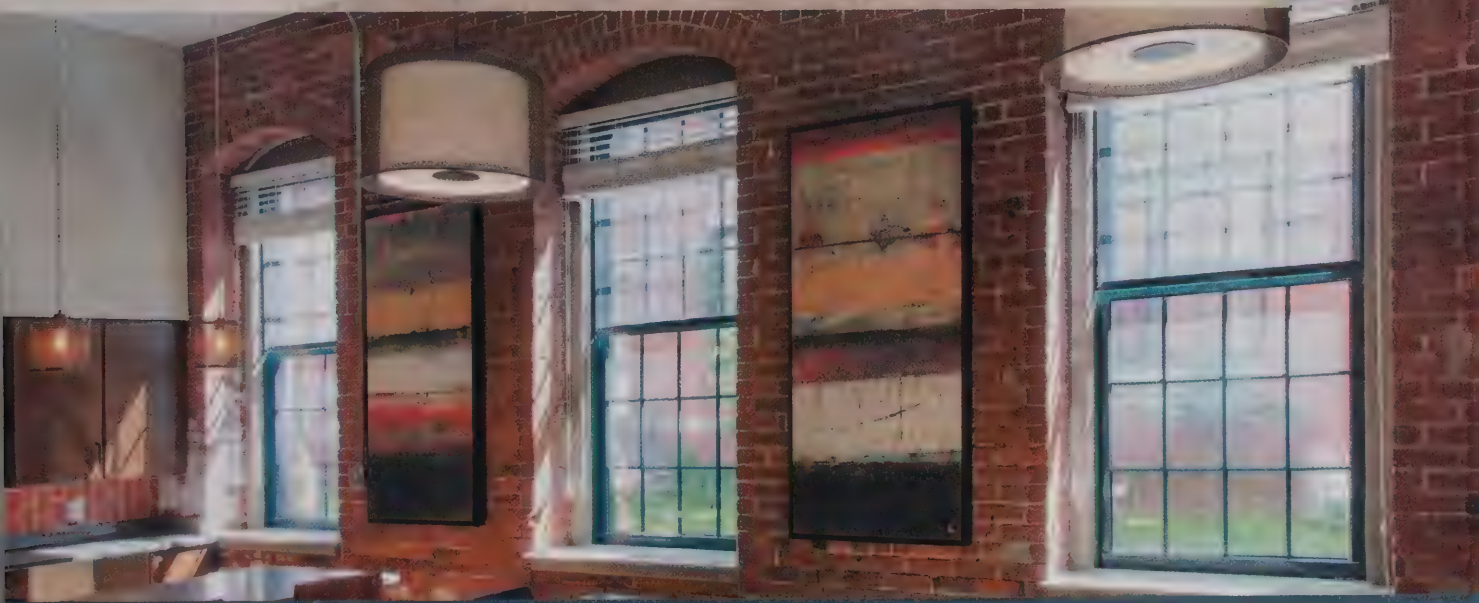
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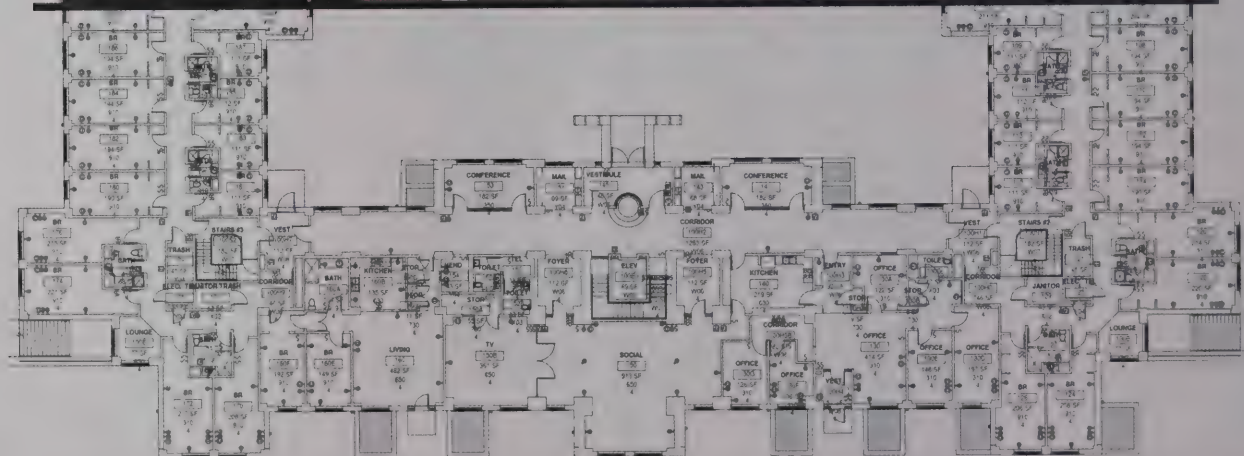
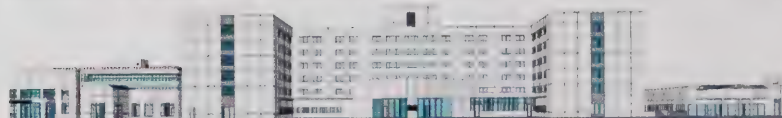
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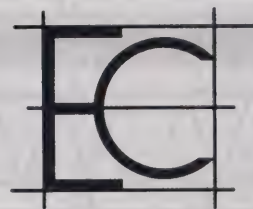
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In this 20th-anniversary issue, *ArchitectureBoston* measures the past while peeking into a crystal ball. We trace the magazine's origin story, revisit topics from previous editions, and envision the future through the eyes of the next generation.

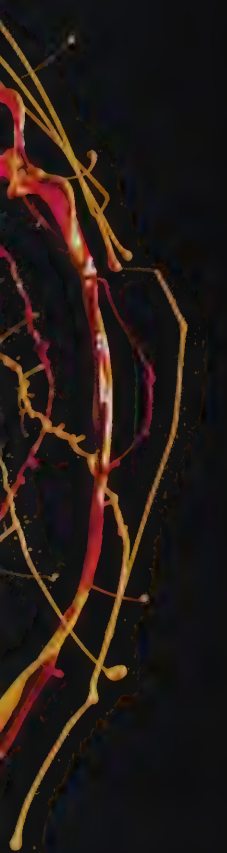
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The Architects Building at 52 Broad Street, Boston, home of the Boston Society of Architects from 1990 to 2011. Watercolor by Wilson F. Pollock FAIA



PRESENT AT
THE CREATION



Twenty years is a long life for a magazine—especially a nonprofit publication that doesn't sell its soul for a handful of silver—but *ArchitectureBoston* also had a long gestation period of careful planning that gave the magazine a distinctive profile from the very first issue.

Our story begins on a crisp October weekend in 1994 on Martha's Vineyard. This was the location of Future Search, a facilitated planning conference where 70 members of AIA New England met to grapple with the difficulties facing the design professions during those recession years of the early 1990s. Among the six major themes that emerged from the weekend, hosted by incoming Boston Society of Architects/AIA president Elizabeth S. Padjen FAIA, was a need for better communication with clients and the public. The BSA board created a communications task force to ensure that the ideas raised by Future Search didn't just sit on a shelf. It took nearly four years of focused labor, but in June 1998, *ArchitectureBoston* was born.

Nearly 20 years later, six of the magazine's founders gathered over lunch to recount its origin story and to reassert its values of independence, inclusiveness, and high standards. The magazine's first art director, Judy Kohn, joined later in a phone interview. This discussion has been condensed and annotated by Renée Loth HON. BSA, *ArchitectureBoston*'s current editor.

Elizabeth S. Padjen (founding editor): The magazine had actually been bubbling up over some period of time. The initial notion was that it was going to be a supplementary insert to the chapter newsletter. It was coming down to the idea that there would be issues of the magazine that would each be focused on a theme that was tied to our Future Search, themes the BSA board was aligned to. And the notion came up through this process that the various [BSA board] commissioners would serve as rotating guest editors for each of these issues.

Peter Kuttner (then-BSA president): This is what I had proposed. And Nancy [Jenner] and Richard [Fitzgerald] were horrified.

Padjen: I remember saying, in effect, "You guys are nuts."

Kuttner: In those days, the board was structured somewhat differently, and we had these slightly Soviet-style commissioners on the board. We had a Commissioner of Education, a Commissioner of Design, a Commissioner of Research, and so on. It seemed they were ready-made for themes. It was even duller than that: Those themes would repeat each year.

LEFT

Black Hole No. 08, by Fabian Oefner, 2013. Inkjet print behind plexiglass.
From the series *Paint in Motion*, which explores modeling paint and making the process of creation tangible through photographs. Photo: Courtesy Studio Oefner

ArchitectureBoston



FIRST ISSUE: 1998 "Practice and Technology"

Padjen: Three themes survived through a couple of years, which were Practice and Technology, which later became Work; Society; and Design. Education was supposed to be the fourth, but I remember thinking, How dreary is that going to be? It was much later when we figured we could focus on—

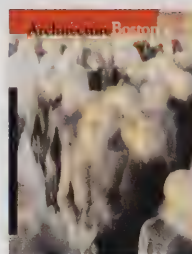
Nancy Jenner (then-BSA deputy director and first publisher): We decided there would be a wild card instead.

Padjen: So the first wild card was the Waterfront issue.

Kuttner: And then we filled it with all wild cards.

Jenner: And we had [the trade show] BuildBoston [now ABX]. We had consultants and contractors interested in reaching our audience, a captive group of people who wanted to buy advertising. At the same time, we had this interest in longer articles, really meaty content; we could talk about bigger questions. So it was really a nice fit of all those things together.

Richard Fitzgerald (then-BSA executive director): I didn't think solely about the magazine in terms of the magazine, but as part of a three-legged animal: the organization itself, the *ChapterLetter*, BuildBoston. Each fed one another, it seemed to me, financially and otherwise.



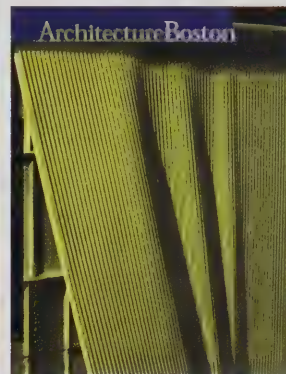
1998 "Society"



1999 "Practice and Technology"



1999 "Society"



1999 "Design"

The team brainstormed scores of titles—ambitious, inclusive, definitely not self-serious—reflecting the magazine's aspirations: *Athens East*; *Gathering Places*; *Only Connect*; *Form and Dysfunction*; *Frozen Music*.

Kuttner: For two years in a row, we had the discussion of: "If we had a magazine, what would it be?" The biggest fear, I think, particularly with the committee chairs at the time, was it not be a regional junior version of *Record* or *Architect* or something like that. *New England Journal of Medicine* was probably the biggest example that people keep popping up with, of something New Englandy and respected across the country.

A memo unearthed from the BSA archives with editorial assumptions for the nascent magazine is also instructive: Editorial autonomy from advertisers. Promotion of ideas and trends. No blatant self-promotion. No jargon. "Articles must have focus and avoid platitudes."

Wilson Pollock (first chairman of the editorial board): While you guys were doing this conceptualizing of the magazine, I was up to my eyeballs in trying to hold a company [ADD Inc] together over in Cambridge. I got a call from Elizabeth [about serving on the first editorial board]. What was most interesting to me was that it was going to be a board assembled with nonarchitects and architects and people who were interesting to meet with. And I said, "Hmm, out of the bunker, let me just get over there." My trips to Boston from Cambridge were something I looked forward to as much as almost any meeting I went to in those days.

Gretchen (Schneider) Rabinkin (among the first regular contributors): It was a venue to get out of the cave, so to speak, and to discuss ideas, even in the context of this

professional organization. It was—and is—this fantastic forum for us to come together to talk about the ideas of our day, as well as the implications for making spaces.

I remember I had just graduated [from Harvard's Graduate School of Design]. I was sitting down at the bottom of the stairs at Bruner/Cott; Elizabeth called me... I started with the Covering the Issues column and wrote that for I think 18 years. The magazine was not only my introduction to the BSA, but it was really my introduction to being an architect, to the profession.

The magazine's editorial advisory board has engaged more than 100 passionate volunteers over the years, for early-morning planning and critique sessions. One meeting in particular illustrates the board's willingness to wade into contentious issues:

Padjen: We all showed up at an 8 o'clock editorial board meeting and [then-Boston mayor] Tom Menino had just announced that he wanted to sell off City Hall and build a new City Hall in the Seaport District. That was the conversation before the meeting settled down. It was Joan Goody [the late founder of Goody Clancy], I think, who said, "We should do an issue about this." So we ended up tossing whatever the editorial calendar was and putting the focus on that. We invited half a dozen young firms to envision something different. And we said to them, "You're going to get two pages. Show us whatever you want." And what amazed me was how collaborative they were.

Pollock: I remember giving a seminar at the early BuildBoston. It was something like how to make a profit in architecture. I think it was sold out, it was so crowded. And we were sharing all the things that [our firm] did, that many architects just weren't doing yet, in terms of how to manage your practice as a business. That was only done in a town like this, where people did open up and support each other.

Fitzgerald: I think for a layman like me, the density of talent in a small physical space like this city was overwhelming, delightfully. As Wilson said, the culture was already there, embedded in the small town of wise, well-educated architects. But the BSA provided a different kind of camaraderie that reinforced the ethic that was already here in the city. That's manageable in a small city. Even though we had thousands of members, a lot of whom weren't architects, it was pretty easy to get to know a lot of people. And it becomes family, even the ones you don't like!

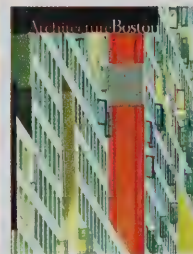
Rabinkin: I was just at City Hall with Maureen Anderson, who's part of the public facilities department there, and she was previewing for me the new lighting strategy and lobby furniture that's improving that public interface on the main floor. The BSA has become an accessible, open, reasonable partner with the City in thinking about what the future of City Hall and the Plaza might be. We hosted a forum here about it. That's all still coming from that one issue—how we're thinking about what this building is and what its landscape means for our city and for our region.



2001 "Connections"



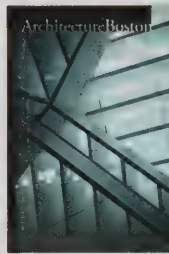
2002 "Money"



2003 "2002:
The Year in Review"



2003 "Peabody Terrace"



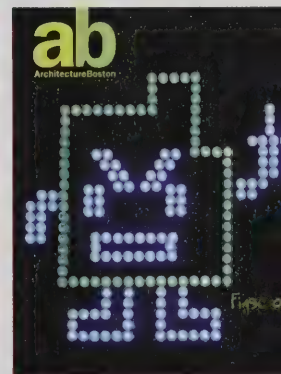
2004 "2003:
The Year
in Review"



2006 "1976"



2007 "Home Economics"



2007 "Fiasco"

2007 "RE-Imagining City Hall"



2008 "Hybrid"



2012 "Listen"



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ArchitectureBoston

We Have Never Been Truly Modern

Pole Dancing Around the Past

Question Beauty

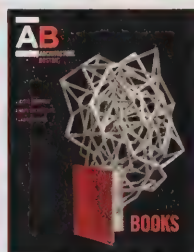
Un Modern



2010 "Unmodern"



2013 "American Gropius"



2014 "Books"



2015 "Voyage"

Advances in communications technology over 20 years have been dizzying. When the magazine first started, editors and contributors were still communicating by fax. But back then, the BSA was ahead of the technology curve.

Jenner: We had the first website for the AIA. That's how we acquired architects.org. It was still very basic, and at that same time, we were thinking about redesigning the website, and e-mail was very nascent.

Padjen: I think it was 1995 when Internet Explorer was launched. So people were still trying to figure out, how do you use this thing?

Kuttner: Actually, going further back in digital history, before we were the first website in the AIA, we were the first bulletin board service. We had discovered a graphic version called First Class, and it allowed us to have little graphic icons. We enlisted Elizabeth, who was president that year, 1995, to have the president's fireside chats. She had her own little folder, and our graphic was a little pyramid of folders, and they were the themes. [Three years before the magazine published], she was already sort of editing internal conversations among the members.

Jenner: When I first started at the BSA, which was in '94, we were still sending out committee notices in #10 envelopes. And then we graduated to postcards.

Judy Kohn (first art director): We had no photo budget. We did what we could with what we had on hand, what we could get from friendly photographers, what I could do with my camera when things got desperate. For the magazine covers, we deliberately stayed away from architectural images. The idea was we would use some kind of abstract fragment of something. We would use bars of gold or pieces of bridges, all sorts of

odds and ends that were nonspecific. Because the audience was mostly architects, it seemed like a good way to appeal to all of them while not offending any of them by not including every member on the cover at some point.

Indeed, one of the magazine's distinguishing characteristics from the start has been its editorial independence, both from advertisers and most chapter activities. It's a big part of what makes ArchitectureBoston so unlike other AIA publications.

Padjen [recalling an early article submission from a prominent member that did not make the grade]: I remember being really, really upset and talking to Richard in his role as father confessor, as he has served architects for many years. And Richard gave me permission to kill it. And it was in the first issue. It was the most liberating thing you can imagine. It was the right thing to do. But it also established something for me—maybe a sense of my own authority, but also I knew that we were onto something that was important to us. We were going to hold to certain standards.

Pollock: Richard, you were ahead of your time in terms of empowerment. You stood by her and supported her at a critical time. You might not have even realized how critical it was.

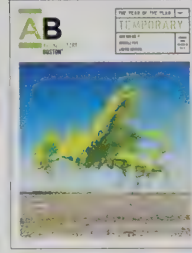
Over 20 years, one thing that has not changed is the mission outlined by Padjen when the magazine debuted: "...to expand both professional and public understanding of architecture by encouraging, even provoking, a broader discussion of the built environment, one that respectfully includes all voices."

Jenner: We would go to the national convention and places around the country, and everyone always wanted to know, "How do we do it? How are you able to publish a magazine and have a trade show and have so many members, more members

2016 "Framework"



2016 "Temporary"



2016 "Borders"



2016 "Domicile"



2017 "Eureka!"



2017 "Taste"

than any chapter?" It came down to this fundamental principle of being inclusive, and not being protectionist, which is what trade associations often were. The idea of allowing a fluidity of voices and welcoming everyone in—people would ask, "You let nonarchitects come to BSA meetings?" And we said, "Yes, *and* we feed them lunch."

I think that with *ArchitectureBoston*, so much of what we did came from that sense of creating a dialogue that's about a shared vision. Because architects don't exist in a vacuum. They need clients, and they need contractors, and they need subcontractors, and they need people to help them market. It's a much bigger world.

The BSA's "Big Tent" philosophy, reflected in the magazine, brings a crucial perspective to what might otherwise be an insular trade journal. Padjen remembers one example from the magazine's second issue:

Padjen: It was a piece on [Boston's] Holocaust Memorial. I had invited Marcie Hershman to write about that; she had just written a book called *Tales of the Master Race*, which was about the Holocaust. The Memorial had been really controversial in terms of its siting [at Faneuil Hall marketplace]. And I was one of the people who thought, "Yeah, great, but there it is in front of one of the oldest parts of the city, and wouldn't it be better to put it out at Fort Point with the Federal Courthouse?" Her story changed my mind. It was reading that piece, where she says, "History happens in the center of things. It happens while you're buying flowers." I thought, "She's right. This is the perfect place for this memorial." It's the power of words to change your thinking; in 600 words, to change what had been, on my part, a really strong opinion.

Kohn: The magazine's strength is the way it manages to underscore a sense of community among the members of the BSA and to keep the community talking about both architecture issues and Boston issues. It's a tool in good times and bad times. Architecture is a profession that responds so much to the economy; they're either booming or they're starving. [Yet] they manage to keep interested and engaged in the conversation, talking about ethics, values, the big-picture items.

Padjen: Over time, a lot of people, I discovered, felt a sense of ownership because they had participated in some way, even if they hadn't necessarily written for it.

Kuttner: You can go national anywhere within the AIA. People everywhere in the country talk about it.

Pollock: No other chapter has anything like it. ■

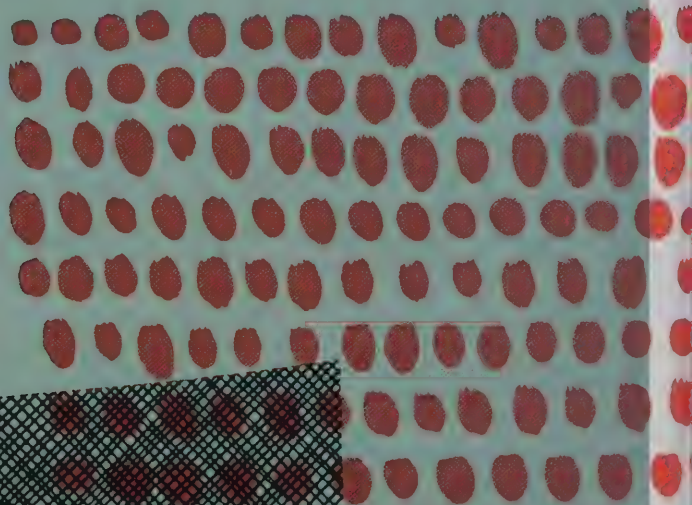
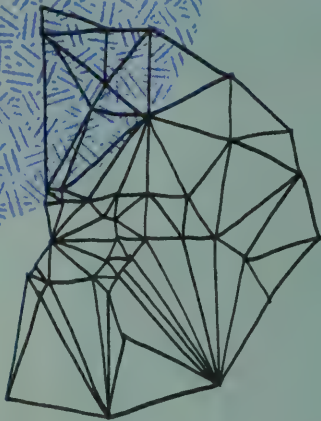




SECOND LOOK



Over the past two decades, many themes have been popular with readers. Five authors reconsider their pieces in light of the passing years.



Illustrations by KATHERINE HUGHES/Stoltze Design

GATEWAY CITIES

NOT SO RUN OF THE MILL

by John R. Schneider

The Gateway City of Pittsfield, my hometown, was in the news again this year. The decades-long battle to clean the Housatonic River of PCBs left behind by General Electric has taken a new twist with an administration in Washington unconcerned about cleaning up the environment. Meanwhile, at the eastern end of the turnpike, ground has been broken on GE's new global headquarters, a major coup for Boston.

Such is the challenge facing the state's Gateway Cities. Communities like Pittsfield and Lowell, where I live now, still need to shed their reputations as old industrial mill cities while finding their place in the global economy. It can be done, but it takes a long view, hard work, and smart investment.

Beginning in 2007, I led a team of researchers from MassINC (Institute for a New Commonwealth) and the Brookings Institution in assessing the economic prospects facing 11 Massachusetts cities like Pittsfield, which shared a struggle to rebuild and align their economies to compete for investment and jobs. But rather than leave it at that, our team wanted to put forward some ideas for how old mill cities could contribute again to the state's economy by serving as regional hubs of economic growth. We hoped our findings would change current conditions. We did not expect that our research would launch a movement, one that's extremely important for Massachusetts and the nation today.

Unexpected back then was the sticking power of the Gateway brand. The report became a rallying cry for the original 11 cities to work together on a shared agenda and to forge a new partnership with the state. The Massachusetts legislature responded by creating a caucus and a definition for a Gateway municipality in state law. The state's investment agency, Mass Development, steered resources into the cities through a new targeted investment fund and created a fellows program to support local planning and economic development. Boston's Federal Reserve Bank established a Working Cities Challenge grant program to support cross-sector collaboration. And MassINC continues to lead the way through its Innovation Institute, which publishes research, shapes policy, and convenes leaders to build capacity in this work.

If you visit me in Lowell, you will find the full expression of what it means to be a Gateway City.

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It's where newcomers and urban pioneers like me come together to help revitalize a community. My neighborhood is a diverse mix of middle- and working-class families doing the things that families do to raise kids and enjoy life. Most of my neighbors immigrated to the United States, many escaping unbelievable hardships. They are proud of their heritage and also proud to be making Massachusetts home. They are great neighbors, sharing with us the celebrations of their families through good Cambodian food, smiles, and kindness (and in the winter, team snow-shoveling efforts!). It's the kind of neighborhood that's good for our nation—diverse, integrated, hardworking—in a city that's leveraged its industrial heritage with a major university to take a leadership role in technology, arts, and culture.

Many of us don't see the connections to the world being forged by Gateway Cities. Walk down main street in Lawrence and you experience the sights and sounds of a thriving Latino small-business community and a remarkable revitalization of historic old mills. Worcester's universities, biotech, and medical centers have a global reach that brings ideas and dollars to the largest of the Gateways. New Bedford is positioning itself on the cutting edge of sustainable energy. Each Gateway City—there are now 26 officially designated—is working hard to find its niche and offer new opportunities to workers and business.

Pittsfield is a smaller city now. Its population has shrunk by almost 30 percent since the 1970s, when I was in high school. There is talk of consolidating schools and districts as the Berkshires lose young people and those who stay grow older. But Pittsfield is making its mark in the creative economy. Its affordability, quality of life, and abundant nature are attracting newcomers who bring talent and ideas that often challenge the status quo—and that's a good thing.

Ten years is not long enough to reverse conditions that were decades in the making. But America benefits when cities like the Gateways become relevant again, helping to create new opportunities and meet new global challenges. ■

JOHN R. SCHNEIDER manages external affairs for a national education reform consulting group. He wrote about Massachusetts' mill cities in the Summer 2009 "Gateway Cities" issue.

WATERFRONTS

A TALE OF FIVE CITIES

by Steven G. Cecil AIA ASLA

Two decades ago, five of Massachusetts' port cities simultaneously launched urban design and redevelopment plans for their waterfronts, creating innovative frameworks for public and private reinvestment. The ports had long suffered from the steady decline of maritime trade and traditional fishing industries, resulting in extensive deterioration of their harbors. But significant development pressure was beginning to build along the water's edge. In Boston, landmark projects such as the World Trade Center and Rows Wharf had captured the public's eye, evoking the promise of new access and the investment value of our historic ports.

In Massachusetts, coastal edges are subject to a unique set of legal and regulatory requirements, collectively called Chapter 91. Special plans were needed in 1997 to create a consistent set of requirements where municipal and state jurisdictions overlapped. The resulting municipal harbor plans proved to be pivotal, changing the course for thousands of acres of land and the harbors that serve them.

Boston's harbor planning unlocked the new mixed-use developments and remarkable public amenities that have transformed Boston's urban waterfront. Dense redevelopment stretches along every district that rims Boston Harbor. A constantly growing network of walks, parks, boat landings, civic institutions, and programmed places has accompanied each increment of development. The waterfront hosts the Institute for Contemporary Art in South Boston, new public spaces and activities around the Fort Point Channel, community boating programs in East Boston, and much more. Less apparent are the environmental shifts. The Deer Island treatment plant removed sewer outfalls from Boston Harbor when it went into full operation in 2000. Healthy sea life is returning. We may need a new rock anthem to replace the familiar refrain in "Dirty Water."

Because of the environmental, physical, and regulatory challenges they face, urban waterfronts are terrifically expensive to develop. Boston's waterfront was well positioned, with billions in public investment followed by a runaway real estate market. The other port cities have their own stories to tell; development on the whole is proceeding, albeit more slowly.

The plan for Fall River, for example, recognized that outmoded highway infrastructure effectively blocked fruitful waterfront redevelopment. Since that time, an Interstate highway interchange and other roadways have been entirely rebuilt. The final step in freeing the waterfront from the highway is under way, leading to emerging opportunities for transformative development.

Gloucester has adjusted its harbor edges to invite recreation and public access, and remains in active pursuit of ways to retain its identity as a commercial fishing port, even within a regulated industry with an uncertain future.

After two decades fostering ideas for game-changing uses that did not pan out, New Bedford has chosen to build upon its strategic location as a fishing port and venue for innovative, marine-dependent uses. This port is creating new public access and amenities, while setting the stage for a path-breaking 21st-century version of a water-dependent, entrepreneurial, industrial, and employment center.

Salem's outdated energy plant dominated land and views along its harbor 20 years ago. An entrepreneurial venture has removed that plant and is replacing it with a compact natural gas-powered facility that will be a better neighbor to the historic waterfront. Also benefiting will be the cruise ship wharf and public landing, which will be among the responsibilities of its newly formed Port Authority.

The moral of this tale is clear: Wise infrastructure investment leads to renewed waterfronts. Peering into the decades ahead, infrastructure investments must adapt our ports to climate change. There is still a lot to do. ■

STEVEN G. CECIL AIA ASLA is a principal of Harriman and leads its multidisciplinary Boston studio. He participated in a roundtable discussion about Massachusetts' port cities in the Spring 1999 "Waterfronts" issue.



HOUSING

RAISE HIGH THE ROOF DREAMS

by Carol Burns FAIA

The promise of the prefab house is that decent mass-produced homes can be delivered quickly and cost-effectively. Modular and manufactured housing—one of the fastest-growing segments of the US housing market in the 1990s—accounted for 25 percent of new house starts. Then, as now, housing needs are urgent: Studies document that every county in the United States faces a shortage of affordable housing.

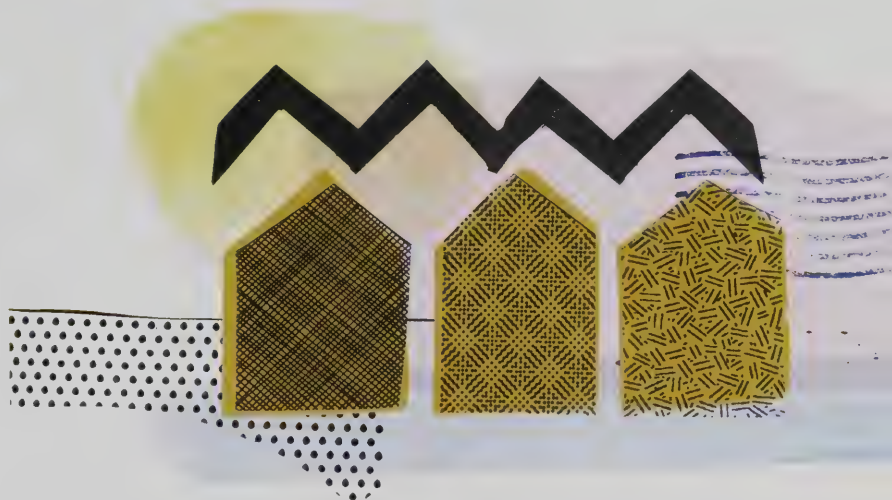
The prefab-housing industry has produced complete, unsubsidized homes characterized by economy, ease of finance, and innovative techniques and materials. By these measures, manufactured housing stands out.

Evolving from “travel trailers” and “mobile homes,” manufactured housing was defined in 1976 by federal building code as a prefabricated structure on a permanent chassis. Compared to modular prefab or any other type of house, manufactured houses require the least amount of time for construction and on-site installation, and purchase costs typically exclude land, which, in mobile-home parks, is leased. Its characteristics make manufactured housing less expensive than other factory-built types of the same quality, providing housing access for many low-income earners.

What has changed since 2001? Housing, prefabrication, and me.

For the housing sector, the Great Recession began in 2007, and its aftereffects continue. While single-family construction has had a decade of weakness, multifamily and rental housing has expanded; 2015 was the fourth consecutive year that multifamily units accounted for more than 30 percent of housing starts. Within single detached housing, the market share of all factory-built homes has decreased: site-built homes constituted 97 percent of house starts in 2014, so the stock of manufactured housing has skewed older. Factory-built home technologies are well established but remain relatively uncommon, perhaps due to repetitive, bland design as well as the enduring stigma associated with “trailer parks.”

For prefabrication, the possibilities have exploded since 2001. New digital fabrication tools, from 3D printing and scanning to CNC milling and laser cutters, have spawned the “maker movement” and renewed interest in experimentation at many scales. Building Information Modeling (BIM) can lead to closer coordination between architects



and contractors. New forms of “flat pack” off-site production of building systems and components might be less expensive, more sustainable, and offer tolerances and techniques not possible in on-site construction. Prefabrication now takes innovative directions unimagined in the predigital era of manufacturing houses and modular boxes for shipment on a highway.

After years of research, writing, and exhibiting on modular and manufactured housing, my firm was awarded a commission in 2007 to design modular housing in Sudbury. The project involves demolishing five single-family homes that, ironically, were prefab Alcon homes with aluminum metal structures that made them difficult to add to vertically and, sealing the demolition deal, had rusted connections. The practical innovations of my firm’s design were in the house type (duplex homes in a single-family zone) and the tenure form (an unprecedented mix of affordable and public housing).

Did this use of prefab modular housing save time or money? The answer, which depends on the choice of a comparative baseline, is yes and no. The modular installer “set” the boxes in just two days; the general contractor completed building and site work in 13 months, a time frame that a site builder with the right crew could match; the architectural commission encompassed five years, a very long time, much of it in securing affordable-housing financing; the Sudbury Housing Authority invested more than 10 years from conception to closeout, much longer than a for-profit private developer would dream of spending on a project this size.

The “hard” construction costs for 10 units of affordable housing totaled \$285,000 per house, and total development costs were \$357,000 per house: 14 percent lower than comparable construction in New England. But the hard-cost savings in the project, largely thanks to the modular delivery approach, offset only half the project soft costs, mostly due to the affordable/public-housing financing, legal, and other fees. (Soft costs in 18 line items, including one for architects and engineers, totaled \$85.9K per house.)

Like much in life, this evaluation depends on context. As a final point of comparison, however, median housing prices in 2013 were \$310,000 in Massachusetts overall but \$675,000 in Sudbury. In this sense, the project was a dream come true. ■

CAROL BURNS FAIA is principal of Taylor & Burns Architects. She wrote about manufactured housing trends in the Spring 2001 “Shelter” issue.

PRESERVATION

REUSE, RECYCLE, REENERGIZE

by Henry Moss AIA

Queen to Alice: “It’s a poor sort of memory that only works backwards.” Fifty years ago, few of us expected that the hearts of American cities would start to beat again. Our downtowns had sustained a continuous decline. There was little protection for the familiar, the recognizably historic, or the texture of active streetscapes—let alone the residents of Boston’s West End. The sense of loss over the demolition of landmark structures such as Pennsylvania Station concentrated emotional reactions to broader changes in our cities and towns. A righteous opposition emerged, reinforced by the unpopularity of replacement buildings and the antiurban spatial economy of our automobile culture. Few people now realize how federal incentives to modernize the appearance of main street retail frontages dramatically affected American towns under the New Deal—or how unopposed those changes were.

The historic preservation movement focused further through the lens of the Bicentennial in 1976, as the Colonial Revival had done in 1876. Federal, state, and local laws and bylaws created a new framework to manage the rate and nature of change. Nationally, our minds had changed. Old buildings became less vulnerable to thoughtless demolition. Preservation architecture became a professional specialty. The general public is now more receptive to contemporary architecture, in part because it has improved in so many ways.

Architecture’s artistic aspirations have long drawn it into the same stylistic teleology as art history, which is about objects—not places. Looking back across the years, I would argue that the adaptive reuse of existing buildings (often with transformative new additions) is among the most powerful placemaking forces of our time. Historic architectural form can

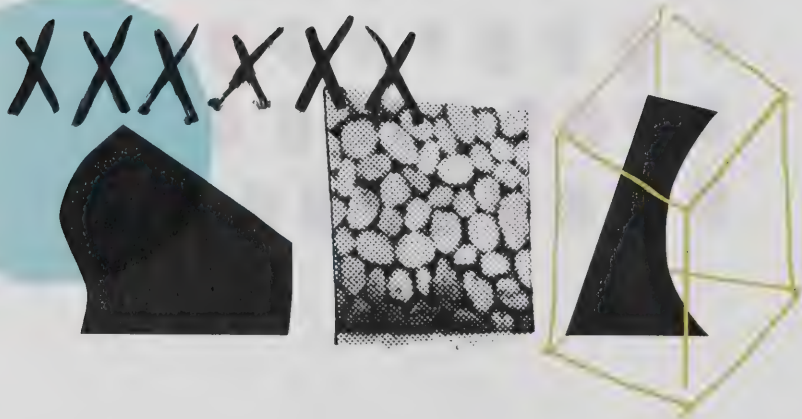
anchor radical retrofits for contemporary circulation, energy management, and spatial fluidity in ways that coincide with less-felt disruption to familiar landscapes. Adaptive reuse can engage the designer’s imagination at the point where a received architecture and possibilities for entirely new design converge. Sensitivity to the original building’s character is not eclecticism. Contemporary response need not be historicist. Schools of architecture are finally recognizing this, and studio projects are helping to erode the reductive opposition that once existed between new design and historic preservation.

Adaptive reuse has emerged as architecture’s true Postmodernism, capable of embracing many interwoven strands of life in the built environment. The Brutalist emphasis on materiality may have informed young practitioners’ approaches to building reuse alongside heightened appreciation of historic buildings. Adaptive reuse has shown that it can be transformative. It can be unconfined stylistically and offer a variety of highly textured ways to weave new developments into urban settings. Federal and state tax credits for historic preservation in real estate development almost always favor large-scale adaptive reuse projects—and deserve continuing political and public support.

Architecture 2030, the nonprofit that Edward Mazria established in response to the climate-change crisis, recognizes the vastness of our existing construction with clear goals for its adaptation to conserve energy over the coming decades. Patrick Keiller, the English filmmaker and observer of the built environment (*The View from the Train: Cities & Other Landscapes*) is succinct: “There seem to be two kinds of space. There is *new space* . . . and *old space*. Most of the *old space* is residential and looks more or less dilapidated. The *new space* is occupied by large corporations of one sort or another, and is not urban in the conventional sense.”

Adaptive reuse has the potential to create architectural richness across this divide while addressing physical and emotional deficiencies simultaneously. Multidimensional, transformative, recognized by the profession on a project-by-project basis, yes—but seldom seen for the national force it has become. ■

HENRY MOSS AIA is a principal at Bruner/Cott & Associates. He wrote about preservation in the July/August 2006 “1976” issue.



TRANSPORTATION

GETTING A MOVE ON

by Stephanie Pollack HON. BSA

Back in 2012, when I wrote about transportation “promises to keep” 40 years after Governor Frank Sargent reordered transportation priorities in the state, I was an outside analyst and advocate; today, as Secretary of the Massachusetts Department of Transportation, I am the ultimate insider.

One thing that has not changed is my agreement with Sargent, who nearly half a century ago canceled highways and invested in transit, recognizing that the MBTA is largely “responsible for the economic and cultural vitality” of Greater Boston. I agreed with the Boston Transportation Planning Review (BTPR), commissioned by Sargent, in its admonition that the regional transit system had been “permitted to deteriorate—physically, financially, and institutionally.”

The winter of 2015 revealed to all the MBTA’s continued deterioration, and today, the T is working on all three challenges:

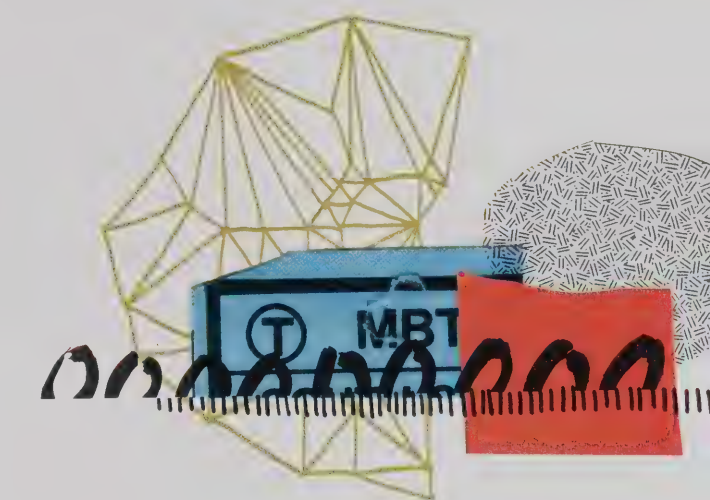
- **Physically:** Red and Orange Line fleets are on order; new buses are on line; and work continues on improving resiliency, tracks, power, and signals, and to modernize stations. These investments will ultimately produce what transit riders want most: reliable service.
- **Financially:** A projected structural operating budget deficit of \$335 million for the fiscal year that began in July was whittled down to \$30 million. Funds that had gone to cover operating deficits now go to fix the system.
- **Institutionally:** New leadership and the steady hand of the Fiscal and Management Control Board have produced change across the Authority, providing greater transparency about T needs and challenges.

The BTPR also challenged us to reinvent transportation planning. Basically, transportation agencies do two things: run service and fix or build infrastructure. So the plans that drive change are service plans and capital plans. That’s why the transportation department (MassDOT) and the T have reinvented capital planning. The \$16 billion rolling five-year capital plan integrated across both agencies prioritizes the right investments: fixing and modernizing the core systems of roads and rails.

And the MBTA is finally doing service planning. Every one of the T’s 170 bus routes is being reviewed and changes are being made to ensure that riders get the frequency, reliability, and quality of service they deserve. Service planning has identified specific investments—now funded in the capital plan—that will increase the number of peak-hour trains on the Red Line by 50 percent and on the Orange Line by 33 percent.

There is, of course, also a place for more visionary long-range planning. MassDOT is completing a statewide rail plan addressing the potential of freight rail and building on recent investments in passenger rail outside the MBTA service area. New statewide pedestrian and bicycle plans are under way, and the capital plan commits tens of millions of dollars to implement the highest-priority investments those reviews identify.

The current planning exercise most inspired by the BTPR is Focus40, which is designed to position the MBTA to meet the needs of Greater Boston in 2040. Focus40 is developing a long-term investment strategy



that recognizes today’s infrastructure challenges as well as the shifting demographics, changing climate, and evolving technologies that will shape the MBTA’s future. In a spin-off from that effort, the MBTA is launching a Commuter Rail Vision process to look at very different futures for the rail network, including higher-frequency regional rail service and using “multiple units” to provide more transitlike service.

But I’ve come to realize that visionary plans don’t matter unless they can be executed. That’s why our most important work isn’t about planning, it’s about changing: changing investments, operations, performance, culture. I believe these changes will result in a system that works for pedestrians, bicyclists, transit users, and drivers alike, with improvements in MBTA reliability, speedier bus transportation in cities and towns, a state-of-the-art fare collection system, and—most important—a capable, customer-centric, financially stable MBTA that can deliver \$1 billion in capital improvements and modernization every year to rebuild the system.

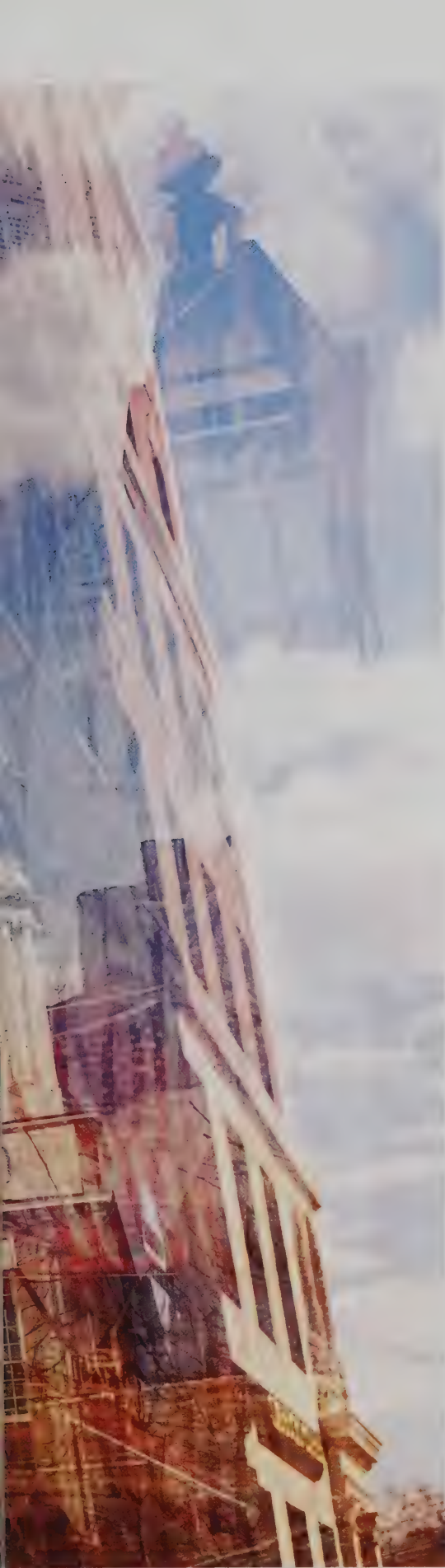
Reversing the MBTA’s “physical, financial, and institutional” deterioration will take many years—but without tackling and completing that process, we will never be able to deliver on the kind of visionary planning that the BTPR inspires and I hope Focus40 will deliver. I became Secretary at a moment when our primary task was to rebuild the foundations for a world-class system that others will ultimately complete—and I’m OK with that. As I am reminded daily by the quote from a Talmudic sage on the wall across from my desk: “You are not obligated to complete the work, but neither are you free to abandon it.” ■

STEPHANIE POLLACK HON. BSA is the Secretary of the Massachusetts Department of Transportation. She wrote about the need for visionary transportation planning in the Winter 2012 “Turn Signal” issue.

A complex collage of architectural images, including various building facades, scaffolding, and structural elements. A prominent red octagonal 'DO NOT ENTER' sign is visible in the center-right. The overall color palette is dominated by warm, earthy tones like reds, oranges, and browns, with some cooler blue and grey tones in the background. The text '20/20 HINDSIGHT' is overlaid in large, bold, white letters.

20/20 HINDSIGHT

DID OUR INVESTMENTS POSITION
US FOR A BRIGHT FUTURE?



by Matthew J. Kiefer HON. BSA

Boston is changing: new neighborhoods, new residents, a new innovation economy, and now a new comprehensive plan. In this age of accelerating urban transformation, it's striking how many of these changes had their origins in decisions made—or not made—20 years ago.

In the waning years of the last century, there was no war on terror, gay marriage, or social media. The millennium approached, but the concept of “Millennials” was as yet unformed. The Clinton administration was implementing the new urbanist HOPE VI public-housing program; President Bill Clinton himself was being impeached.

The Charles River cleanup was progressing after Governor Bill Weld took an impromptu plunge into the river to kick-start it. And Mayor Tom Menino began feuding with City Council president Jimmy Kelly about the spoils of development on the South Boston waterfront as the economy improved.

Twenty years later, it's clear we got some big things right. The Harbor Cleanup, Big Dig, and Silver Line have helped the city flourish in unexpected ways. But we've become dependent on private development to address more incremental needs, so the advantages of growth are unevenly distributed, and the fruits of development sometimes fall short of our civic aspirations. Plus we're playing catch-up on things we missed or ignored, such as the shift to nonauto travel and especially the effects of climate change.

First, the good news. Starting 20 or more years ago, we made large public investments in water quality in Boston Harbor and the Charles River. Though motivated by environmental concerns (and a lawsuit), these investments are paying huge quality-of-life dividends today. After turning our backs for decades on our gritty postindustrial waterfront, we're now reconceiving it as Boston's front yard, recalling our maritime heritage.

Cleaning the harbor also helped unlock the development potential of the Seaport—more on that to follow. Some 38 miles of the 47-mile HarborWalk are in place. The mostly swimmable Charles River Basin can now be envisioned as a signal recreational resource; a swim park may not be far in our future.

The Big Dig, primarily designed to increase auto throughput, also leveraged new parks along the Charles River, in East Boston, in Charlestown, and of course downtown. The Rose F. Kennedy Greenway gets better every season with new

LEFT

Beacon Hill #2, Boston, 2005, by Doug Keyes. Pigment print. From “Becoming Language,” a series of multiple-exposure portraits exploring places we no longer “see” even though—or because—we experience them every day. Photos: Courtesy of the artist and Klompching Gallery

programming and amenities. Our waterfronts will need more investment in the next 20 years to become more connected to each other and more accessible to all, but we've made real progress.

Another cobenefit of the Big Dig—and its companion mitigation project, the Silver Line—was better airport access, especially from the Seaport. Last year, Logan Airport had more than twice the flights it had in 1998 and more than four times as many passengers. With nonstop flights to 53 international destinations, Logan is now a portal to the world, helping explain not only General Electric's move to the Seaport but also Boston's increasing "global city" footprint.

But we're also being held back by investments not yet made. Three transportation megaprojects—the Urban Ring, South Station expansion, and North-South Rail Link—have languished, though the last one could be having a second life. Even more important, we have not made public investments in many more incremental needs.

After 20 years of transit-oriented development, we have not invested nearly enough in transit, so growth is concentrated in transit-served areas and the system struggles to meet demand—not only during snowmageddons but also every weekday morning. If the Green Line extension proceeds, it will be the first rail extension since the Red Line reached Alewife in 1985, though the population of the city of Boston alone is almost 20 percent greater than it was then.

We have also avoided making the public investments that could transform the Massachusetts Turnpike in central Boston from a transportation scar to a civic asset. In the last 20 years, a succession of turnpike air rights proposals have foundered

on constructability challenges, upside-down economics, and neighborhood opposition. The last air rights project, Copley Place, began almost 40 years ago and had significant public funding. It's time to ask whether we need to deploy infrastructure support, tax abatements, or other incentives if we expect private developers to bind the wound.

The Seaport may be the most visible emblem of Boston's resurgence. Twenty years ago, it was mostly awash in surface parking and low-scale uses. But the aforementioned troika of federally funded projects, along with land acquisition for the Boston Convention and Exhibition Center, were all completed or well under way.

To build on this momentum, in 1999 the Boston Redevelopment Authority completed the Seaport Public Realm Plan to guide the area's growth. The first to espouse city-making principles that are now second nature, the plan envisioned mixed uses on a new interwoven street grid, with a rich public realm of sidewalks, plazas, and parks.

But the same federal government that funded the district's emergence hobbled it with constraints. The Federal Highway Administration required the Big Dig's surface streets to promote traffic flow rather than walkability. Federal Aviation Administration requirements after the September 11 attacks limited building heights to protect air navigation. This combination led to boxy buildings on wide streets rather than the fine-grained urbanism many hoped for.

Crucially, there was no public funding for the plan's open space and cultural amenities; these were expected to result from development exactions. We are now seeing the fruits of this approach as the district emerges, project by project. It's

not getting rave reviews, often garnering epithets like "soulless" and "bland."

These critiques are somewhat misguided—a new development district was never going to replicate the Back Bay. They also seem premature when neither street trees nor street retail has reached maturity. Also, architectural ambitions are increasing as development risk diminishes. (James Corner Field Operations and Rem Koolhaas are now in the mix for public realm improvements and a major building, respectively, in the Seaport Square development.)



LEFT
Boston Common, Boston, 2005,
by Doug Keyes. Pigment print.



RIGHT

Theatre District, Boston,
2005, by Doug Keyes.
Pigment print.

But the real lesson is that the Seaport is the best we're likely to get when we rely on private development to pay not only for itself but also for the local armature of streets, sidewalks, and sewers that supports it—not to mention carrying the burden of signature open spaces and cultural amenities. Development feasibility takes precedence, as it must.

Exactions have made a difference in some areas. The City of Boston's inclusionary housing program, in place for nearly 20 years, has produced more than 4,000 affordable-housing units, fueled by a strong housing market. But relying on development to fund public amenities means that the hottest development districts get the most goodies, bypassing neighborhoods with greater needs.

The swath of central Boston from Roxbury through Dorchester to Mattapan, largely low-income neighborhoods of color, are not well served by transit or open space. They attract the least private development but have the greatest need for the benefits development can deliver. They'll likely need more public investment to catch up with the rest of the city's growth.

We've missed some other things, too. Several of today's challenges were barely considered two decades ago, when the urban comeback story, here and elsewhere, was still tentative and "the sharing economy" and "the Internet of things" were the province of techno-fantasists.

But we certainly could have started planning sooner for post-auto mobility, by investing not only in transit but also

in accommodating bikes and pedestrians. We're also late in addressing the rising seas that could swamp the Seaport, Logan Airport, the Big Dig and Silver Line tunnels, and the new parks they brought along with them. It took Hurricane Katrina and Superstorm Sandy before we began to plan seriously for this existential threat. Soon we'll need to pivot from planning to doing.

So as gray old Boston reinvents itself again, it's worth asking what the last 20 years revealed that might help us face the next 20. Boston, frankly, struggles with change. We love our city's unique character and identity. They draw people here and need to be safeguarded as the city evolves. But our ardent self-regard also holds us back. In the past 20 years, we've relearned how cities work; we're not clearing "slums" or building highways anymore. Yet every ambitious infrastructure proposal triggers years or even decades of often rancorous debate.

Then, when we've done them after all, we celebrate only briefly before slamming them for not being better. The Seaport and the Greenway may not be perfect, but most cities would die to have either one. Here in Boston, we expect to be envied, always striving to be that shining "city on a hill" of Puritan imagination. Our relentless self-criticism—the obverse of our self-regard—also holds us back.

It's undeniable: Boston is growing and changing. It's mostly good. If we can find ways to invest in our future and to spread the benefits of growth, we can make this a great city for everyone, for the next 20 years and well beyond. ■

BRAVE NEW



PRACTICE

IT'S 2037. WHAT OPTIONS AWAIT THE GRADUATE?

by Jay Wickersham FAIA

A warm morning in April 2037. Career day at Boston's International College of Architecture. Sara McNally-Ng, a student in her final year, enters the school's auditorium.

She goes into a booth, sits down in a womblike chair, and pulls a capsule over her head. Images of gleaming skyscrapers in the world's great cities flash past. A voice speaks:

"We are Vitruvius Giganticus, Limited. Call us ViG.

"In an industry that has been known for smallness, inefficiency, and losing money, we are large, efficient, and very profitable. ViG is the first design-construct corporation to enter the Fortune 50. We are publicly traded, with 146,000 employees, offices in 58 countries, and annual revenues of \$180 billion. Do you dream of designing underground cities in Antarctica? Autonomous ocean liners? The logo for the Trans-Himalayan Bicycle Race? Only at ViG can a young architecture grad work on projects like these."

"How did ViG start?" Sara asks. "You call yourselves a design-construct corporation, but isn't it true that the company began as builders, not as architects?"

"I see that you are well informed," the voice replies. "ViG was born in 2027, out of the merger of three of the world's five largest construction companies. As in other industries—from automobiles to pharmaceuticals to accounting and law—size produces synergies. We are big enough and diverse enough to provide our global clients with all the services they demand. And we have the resources to invest heavily in R&D for new building technologies."

"So where does architecture come in?"

The voice chuckles. "That grew out of a business opportunity," it says. "You were probably still in high school, but I'm sure you remember the market crash of 2030. ViG was able to buy up a lot of its smaller competitors: engineering, graphic design, and architecture firms. We have our own real estate development and finance subsidiaries. And don't think we don't care about design. Artificial intelligence programs design many of our high-rises, but not all. We took a cue from

ILLUSTRATIONS BY ERIC HANSON, an illustrator and writer based in Minneapolis. (He originally planned to become an architect, until he did poorly in freshman calculus.)



media companies, such as Disney and acquired all available rights to the modern architectural masters. That's when we established our Legacy Studio. ViG can design a new building adapting a design by Mies or Wright or Le Corbusier, for clients who care about that sort of thing."

Practice models continue to diversify, shooting off in radically different directions. In another 20 years, these predictions may seem tame.

Sara doesn't say anything. "Don't delay," the voice says. "You're talented and ambitious, and I'm sure you have college friends who will be full-fledged lawyers and doctors before they turn 30. You should check out Fast-Track, ViG's leadership training program, in which we offer salaries that are actually competitive with those in other professions."

Feeling dazed, Sara walks to the next booth, where a man wearing an antique T-shirt and jeans sits at a drafting table. He shakes her hand and introduces himself as Brian. While he talks, he illustrates his points with pencil sketches, drawn on yellow tracing paper.

"You've just come from ViG? At the Slow Build Cooperative, we do things a little differently. You'll follow a project from

beginning to end—starting with concept sketches, and finishing by building and installing cabinets and furniture. There's nothing like getting sawdust in your hair to help you understand what you've designed."

"A professor took us on a field trip to visit a private-school library you designed," Sara says. "I really admired the elegance of the design and the care you put into materials and details. But doesn't this way of practicing limit the scale of your projects?"

"That is a challenge," Brian says. "From the start we've chosen to keep Slow Build small. Our size is capped at 30 architects, and we never take on more than 10 projects at a time. That way we can give each project the attention it needs. Staying small also allows us to maintain our ownership structure as a cooperative, so everyone has an equal share and an equal voice.

"But recently we've been developing a national network of other small firms that share our practice model and our values. That way, we can go after bigger projects without losing our firm culture."

"Is it true that you don't use computers?" Sara asks.

Brian smiles. "We do draw a lot at Slow Build," he says. "We believe that there's something special about the hand-brain connection. But we're not Luddites. We'll use any technology that's available, so long as it helps us make better buildings."

"But how do people in your firm make a living?"

He tears off the sheet of sketches and hands it to Sara. "Think about it," he says. "At Slow Build, we've found that old ways of making architecture are always new."

In the third booth, a woman in a white lab coat greets Sara. "I'm Dr. Chris, from PlanetCare." She points to a large screen that displays images of buildings and landscapes and pulsing graphs of data. "That's the real-time environmental monitoring for a mixed-use community we manage."

"PlanetCare's mission is to help owners meet federal standards for net-zero carbon emissions, as mandated by Congress in the Build It Green Act of 2021. We redesign building systems to reduce energy demand, install on-site solar and wind, and create wetlands to absorb the floods caused by sea-level rise—all at our own cost."

"And we don't just talk about sustainability; we make measurable promises to show how we will achieve it. The owner doesn't pay us unless we've met all regulatory standards—in which case, we get a share of the operational cost savings and of any appreciation in value upon sale."

"Isn't that awfully risky?" Sara asks. "I was taught in my professional practice course that architects should never make legal commitments that their insurance companies won't cover."

"No risk, no reward," Dr. Chris says. "For too long, architects have shied away from responsibility for building construction and performance. At PlanetCare, we've found that with the right mix of in-house expertise, we can take back that

responsibility and make our practice model work. Only about one-half of our staff are architects and engineers. We have a good number of scientists, like me. (I have a PhD in climatology.) The rest are business people, with backgrounds ranging from finance to facilities management."

"What you do sounds worthy," Sara says, "but where does design innovation come in?"

"That depends on how you define innovation. Think of PlanetCare as the architectural equivalent of the family doctor. You'll have the satisfaction of helping to heal damaged ecosystems and communities. Our projects may not produce slick images or win design awards; but our market keeps growing, and we just got a new round of Wall Street financing."

Do these scenarios for the future of practice sound far-fetched as we try to imagine how the architectural profession might evolve over the next few decades? Perhaps—but the current state of practice would have seemed far-fetched 20 years ago, when there was no BIM, no LEED, and only three American firms had more than 1,000 employees. Practice models continue to diversify, shooting off in radically different directions—from ever-larger corporations that expand through mergers and acquisitions to small practices that meld design with the crafts of making to mission-driven firms dedicated to environmental and social sustainability. In another 20 years, these predictions may seem tame.

As for Sara, career day 2037 is leaving her with a lot to think about. There are so many different architectural paths that she could follow, once she figures out how to start paying off the \$750,000 she owes in student loans. ■



THE KIDS ARE ALL RIGHT

THE NEXT GENERATION LOOKS AHEAD

Interviews were conducted by Fiona Luis
and have been edited for length and clarity.



CALEB HAWKINS

Wentworth Institute of Technology
MArch '17

HOMETOWN

Concord, New Hampshire

EMPLOYED AT

Höweler + Yoon Architecture, Boston

The biggest challenge facing society in 20 years?

Its relationship to advanced technology. Today, technologies like the smartphone have had a significant impact on the way people interact with and perceive the world they live in. Architecture has done little to intimately engage with this change in how people live.

How can architects help?

By engaging with not just the body but all of its augmentations, from a device in the hand, on the body, or in the brain. By embracing these technologies from the conceptualization of a space and its use, architecture can synthesize both our physical and digital realities to better suit the lives of the people who interact with that space.

How can architectural education be improved?

By framing a pedagogy aimed at embracing and intervening in the dialectic between academia and professional practice. There is great value in understanding their relationship and how it drives architecture forward as a profession.

What do you see yourself doing in 2037?

Writing, teaching, and giving lectures around the country about art, technology, and design; and working with a highly skilled team at a design firm, implementing our processes and ideas.

In a yearbook, you'd be voted most likely to:

Be the biggest techie.

The biggest challenge facing society in 20 years?

Widening divisions in American society will affect our ability to respond proactively to issues like climate change and a destabilizing political climate. How will we protect freedom of speech in 2037 if we're incapable of agreeing on the definitions of *freedom* and *speech* in 2017?

How can architects help?

Good designers are like modern-day philosophers; they have the power to heal these fissures. Where we perceive divisions, we may actually be able to repair them—literally, like restoring a park or waterfront to bring people together, or a less-physical opportunity like influencing the passage of laws dictating environmental standards for design and construction.

How can architectural education be improved?

By focusing less on information and skills and more on adopting the practices of liberal arts education to teach students how to think critically about the world and the impact of their work on it. The artistry of design and the thinking that is tied to it is what makes architectural education valuable. Components of design education should be integrated with one another, with other design disciplines, and with anthropology, political science, and philosophy.

What do you see yourself doing in 2037?

Running for or holding public office after a few years of practice but remaining deeply convinced that societal struggles should be approached with a designer's mind and eye.

In a yearbook, you'd be voted most likely to:

Break all the rules, in all the right ways.

CYRUS DAHMUBED

Northeastern University
MArch '18

HOMETOWN

Newton, Massachusetts

INTERN AT

Hacin + Associates, Boston



MARIAN PETISON

Massachusetts College
of Art and Design
MArch '17

HOMETOWN

Worcester, Massachusetts;
originally from Ghana

EMPLOYED AT

Grisham Smith and Partners,
Nashville, Tennessee

The biggest challenge facing society in 20 years?

A progressively reclusive society, with people caring more about themselves, wallets, and “stuff” than the next human being; a breakdown in social networks; and a lack of social support.

How can architects help?

By looking back at how old communities and towns were established and designed to foster social interaction. We need to focus on using design as a tool for community building.

How can architectural education be improved?

More courses in architectural professionalism; learning how to manage and work with different types of clients, consultants, and other professionals in a design-build team should be a required part of the curriculum. Internships and co-ops should be mandated. The Community/Build Studio at MassArt should be emulated.

What do you see yourself doing in 2037?

Owning an established firm with a focus on healthcare design, and partnering with architects in Ghana to establish a design practice; teaching future architects and designers.

In a yearbook, you'd be voted most likely to:

Be successful.



HANNAH OSTWALD

Northeastern University
MArch '18

HOMETOWN

Cohoes, New York

EMPLOYED AT

Prellwitz Chilinski Associates,
Cambridge, Massachusetts

The biggest challenge facing society in 20 years?

The amount of waste created by our society.

How can architects help?

By choosing materials that can be reused or recycled when buildings are demolished at the end of their lives. When designing spaces for the future, the entire life span of the building needs to be analyzed.

How can architectural education be improved?

By bridging the gap between designing in school and the construction of those designs. In school we were encouraged to solve complex problems, but we lack knowledge in how a built piece of work actually comes together. We need more exposure to the range of materials available today and how to use them to their greatest potential.

What do you see yourself doing in 2037?

Working in the Northeast as principal of an architecture firm, while teaching at a university part time. I will have designed my dream home on the water with a porch to rival the interior space, and I'll be whipping up half moon cookies on the weekends.

In a yearbook, you'd be voted most likely to:

Volunteer time I don't have.

The biggest challenge facing society in 20 years?

Pressing challenges will include resources, climate, inequality, disease. Is it possible to distinguish between the urgency of political crises and the representation of these crises?

How can architects help?

Just as Le Corbusier's architecture used the aesthetic innovations of Cubism to place the individual in a newly industrialized world, so, too, must architects figure out how to record our culture in dots per inch. We must critically question the way digital imagery has dislocated our understanding of space and, more important, our position in that space.

How can architecture education be improved?

Suppose we were taught that architecture was entertaining. We would have to frame architectural pedagogy with a much keener focus on the narratives that underpin design. Rather than teach architects to follow functions, we should teach them to form fables.

What do you see yourself doing in 20 years? Writing a book.

In a yearbook, you'd be voted most likely to: Teach.

ALEXANDER PORTER

Harvard University
MArch '18

HOMETOWN

Gilbert, Arizona



ANDRES MOREIRA

Boston Architectural College
MArch '17

HOMETOWN

Loja, Ecuador

The biggest challenge facing society in 20 years?

Preserving local cultural and heritage values, the ability to adapt to constant climate changes, and ensuring that infrastructure evolves at the same pace as technology.

How can architects help?

I don't think that problems should be solved by only one discipline.

How can architectural education be improved?

By giving more importance to traveling and exchange programs. We are taught to observe and draw, but it is also important to experience a space.

What do you see yourself doing in 2037?

Teaching and maintaining a balanced life between academic and professional work, designing and researching in my own firm.

In a yearbook, you'd be voted most likely to:

Play the role of Alexander Hamilton in *Hamilton* or teach in a university.

The biggest challenge facing society in 20 years?

To find a way for the many communities that exist within society to adapt to new information and conditions that do not create boundaries and discount people who challenge the status quo.

How can architects help?

Environmental and climactic systems are changing at record speed. Architecture must respond to this new time scale. The built environment must respond to changing needs and conditions through new technological innovations and more agile designs, and by employing communities to participate in placemaking.

How can architectural education be improved?

By including students and emerging professionals in shaping new building and design technologies. Engineering schools often partner with industry and/or government institutions to develop new technologies. Design schools should follow this model.

What do you see yourself doing in 2037?

Focusing on designing spaces that serve the larger community while paying particular attention to the inclusion of our marginalized and vulnerable populations.

If this were a yearbook, you'd be voted most likely to:

Go into politics or work for the homeless.

ANNIKA NILSSON RIPPS

Boston Architectural College
MArch '18

HOMETOWN

Moultonborough, New Hampshire



AIDAN SYMS

Massachusetts College
of Art and Design
MArch '17

HOMETOWN

Natick, Massachusetts



The biggest challenge facing society in 20 years?

The negative impacts of climate change. Population increase in the face of destabilization due to climate change will compound all social issues.

How can architects help?

They have the responsibility to create a world that sustainably influences humanity to act in a way that cultivates strong social, economic, and ecological systems.

How can architectural education be improved?

By cultivating a foundation of skills through gradual immersion in the professional design world. Much like that of trades, we should have students practice alongside professionals on real projects from day one. Technological literacy and digital design education is a crucial part of this relationship. Encouraging diverse, comprehensive dialogues and experiences is critical to the development of a progressive and ecologically conscious architectural pedagogy.

What do you see yourself doing in 2037?

Being part of an interdisciplinary design studio that works on a diverse group of projects. I'd like to live and work in an interesting place as well.

In a yearbook, you'd be voted most likely to:

Bring balance to the force.

The biggest challenge facing society in 20 years?

The acceleration of climate change. I'm interested in where and how this will intersect with the rise of virtual environments. New technologies of virtual immersion have already seduced users, designers, and their markets, inhibiting critical thinking while distancing us from the tactile, physical processes of making and interacting. Collisions (and collaborations) between the real and the virtual will become all the more significant, putting designers' interactions with the client and artifact into question.

How can architects help?

We should remain critical about the social and environmental impacts of our work and about the role new technologies play in our thinking in the face of globalized markets and the demand for quick solutions. Practitioners should continue seeking the hidden narratives of places, peoples, and things—weaving them into their creative process, using them as speculative catalysts, and reinterpreting the ways in which they can be shared with the public realm.

How can architectural education be improved?

By encouraging students to take their time and think critically. For students who are affected by socioeconomic pressures and shifting environments, this is particularly difficult. It is easy to fall into a strictly goal-oriented approach to design—one that excludes exploration, speculation, and engagement. Educators should remind their students that cultivating different modes of expression—writing, philosophy, music—is necessary in becoming fluent designers. Simply arming students with tools for computation and representation is not enough. Educators should equip them with a critical lens in the use of new tools—particularly important in an age of evolving technologies.

What do you see yourself doing in 2037?

I've always connected with Tod Williams and Billie Tsien's adage that architecture is an act of optimism. It's near impossible to project what or where I will be in two decades, but I will be vocal, speculative, and optimistic.

In a yearbook, you'd be voted most likely to:

Use the most tracing paper.

RANDY CRANDON

University of
Massachusetts/Amherst
BFA Arch '17

HOMETOWN

Duxbury, Massachusetts

EMPLOYED AT

The Center for Design
Engagement, Holyoke,
Massachusetts

ANASTASIA LEOPOLD

Northeastern University
BArch '21

HOMETOWN

Santa Cruz, California

INTERN AT

MADI Architecture +
Planning, Santa Cruz



The biggest challenge facing society in 20 years?

Climate change. Growing up on the coast, I was taught about climate change by looking at maps of Santa Cruz slowly going underwater. In California, we are already facing what extreme changes in weather can do, from severe droughts to massive amounts of rainfall.

How can architects help?

It is time to rethink our current ways of designing houses, cities, and commercial buildings. By designing structures that account for future use and sustainability, we will use fewer resources to rebuild. We are facing unprecedented environmental conditions, population peaks, and resource crises. Expanding the bubble of designers to include scientists and politicians can influence public opinion and policy surrounding building codes, product take-back laws, and solutions we haven't even thought of yet.

How can architectural education be improved?

By emphasizing an interdisciplinary approach and student wellness. I chose Northeastern because it allowed to me to have a rigorous architectural education while dabbling in philosophy, music, sociology, and environmental science. But I don't think students should be crying in crit rooms, skipping meals to work, and eating Nutter Butters at 3 a.m. Universities should provide counseling services and mentors who can guide students in a healthy direction.

What do you see yourself doing in 2037?

Working on public-use buildings like schools and community centers; tackling affordable housing. I wouldn't be surprised if I found myself back in California.

In a yearbook, you'd be voted most likely to:

Wear more than one (or two) pairs of pants in the Boston winter.



Photo: Ethan Kermisier

The biggest challenge facing society in 20 years?

Science fiction often deals with extraplanetary habitation, the rise of automated machines, and mass starvation caused by global warming. Each one of these possible futures raises its own set of uncertain ethical dilemmas that are frightening in scope; yet humanity is facing a confluence of *all* these phenomena within the next 20 years, a confluence that even fiction hasn't been able to address. How do we provide basic amenities to all in a world fraught with displacement on a scale we have never seen before?

How can architects help?

We are trained to thrive in uncertainty. We ask questions. We probe complexity. We think broad and deep in a single stroke. We organize teams, heed counsel. We care about our clients and users. We will be called on to use this skill set to network across national, racial, and economic boundaries to ensure the environment—built, natural, or otherwise—is fit and welcoming for all.

How can architectural education be improved?

Through a stronger grounding in the liberal arts. Though it can be easy to rattle off the “what” and “how” of a project, the “why” can be more difficult to define. A background in liberal arts provokes the questions students need to answer for themselves before they attempt to answer the “why” in their work.

What do you see yourself doing in 2037?

As a child, I dreamed of space travel and living on another planet. Recent developments have reawakened that desire, and I can dream again of working into retirement off-planet, cultivating new communities on new worlds.

If this were a yearbook, you'd be voted most likely to:
Start a commune.

RAND LEMLEY

Boston Architectural College
BArch '17

HOMETOWN
Texas

EMPLOYED AT
Kao Design Group, Somerville,
Massachusetts



TYLER R. SWINGLE

Massachusetts
Institute of Technology
MArch '18

HOMETOWN
Bozeman, Montana

The biggest challenge facing society in 20 years?

Reconciliation. The ability for humans to acknowledge other perspectives beyond their society, culture, and race, as well as beyond their species, is missing in the way we think and process information.

How can architects help?

There is potential for built environments or architecture to operate differently and reflect an openness, but I think designers have more agency in building a world geared toward reconciliation. Designers make decisions every day as to which society they are contributing to and eventually building. Small decisions, mostly not related to architecture or design in general, more frequently shape the world we live in.

How can architectural education be improved?

By increasing a school's ability to support a wider range of questions/interests while at the same time testing the application and influence of architecture inside these scenarios. Improvement always stems from questioning normal practices and existing techniques.

What do you see yourself doing in 2037?

I imagine my partner and I own some property, but I am not sure if we live there. Work will probably be focused on the upland territories of major coastal cities and transitioning populations away from water-prone areas. That being said, I would love to be working on some sort of landscape remediation project.

In a yearbook, you'd be voted most likely to:
Cheer you up or lower your stress level.



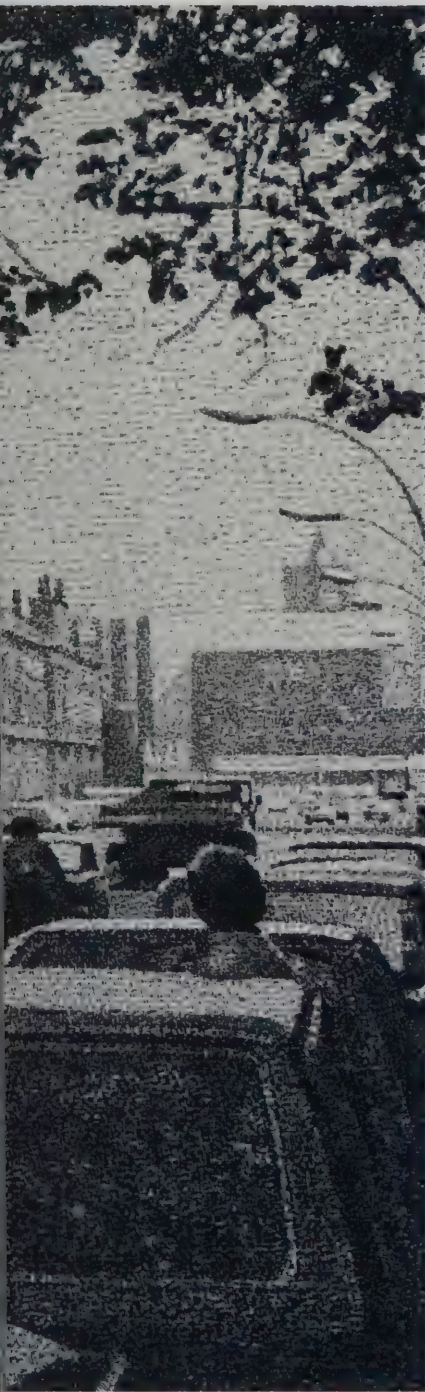


POINT IN TIME

For Italian artist Federico Pietrella, time is paramount. For about two decades, with canvas as his backdrop, he has used ink and rubber date stamps to conjure artworks out of thousands of numbers representing days, months, years. Gaze at his pieces from a distance, and you'd never guess the medium: a street scene, a portrait, a swath of nature all come across like fuzzy black-and-white photos. Is this digital art, you might wonder, the pixels part of the technique? Then you peer closer and realize that the Berlin-based artist uses the familiar office-supply object as his brush, deploying an everyday device to transform segments of space into a human form or an urban façade. The effect mimics pointillism while winking to the arc of time.

As he works, Pietrella uses the date of that particular day to progressively stamp his painting into existence. Seen up close, the layers and grids of dates overlap and construct beginnings, middles, and ends, much like the passage of life itself. Whether he takes two days or three months, his art becomes its own photorealistic chronometer, documenting the time elapsed in its creation. "Time is a mysterious thing," he once told an interviewer. "It's the most important thing from which everything is derived—work, existence, life."

—Fiona Luis



LEFT

From 11 January to 19 February 2011.



RIGHT

Detail of *From 11 January to 19 February 2011*. Acrylic stamped on canvas, 180 cm × 280 cm. Courtesy MART, Museo d'Arte Moderna e Contemporanea di Trento e Rovereto, VAF-Stiftung Collection, Frankfurt/Main. Pietrella's titles often correspond to the duration of the artwork's creation; this piece was produced from January 11 to February 19, 2011.

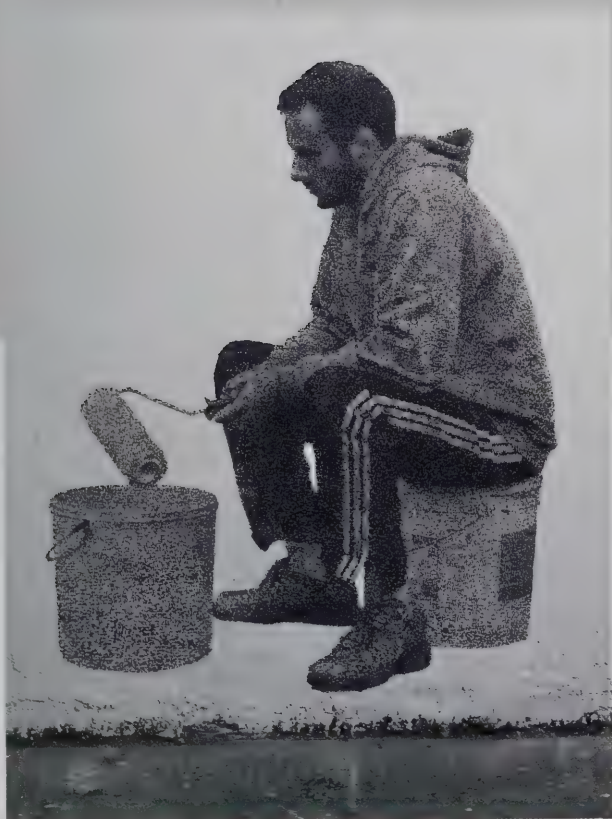


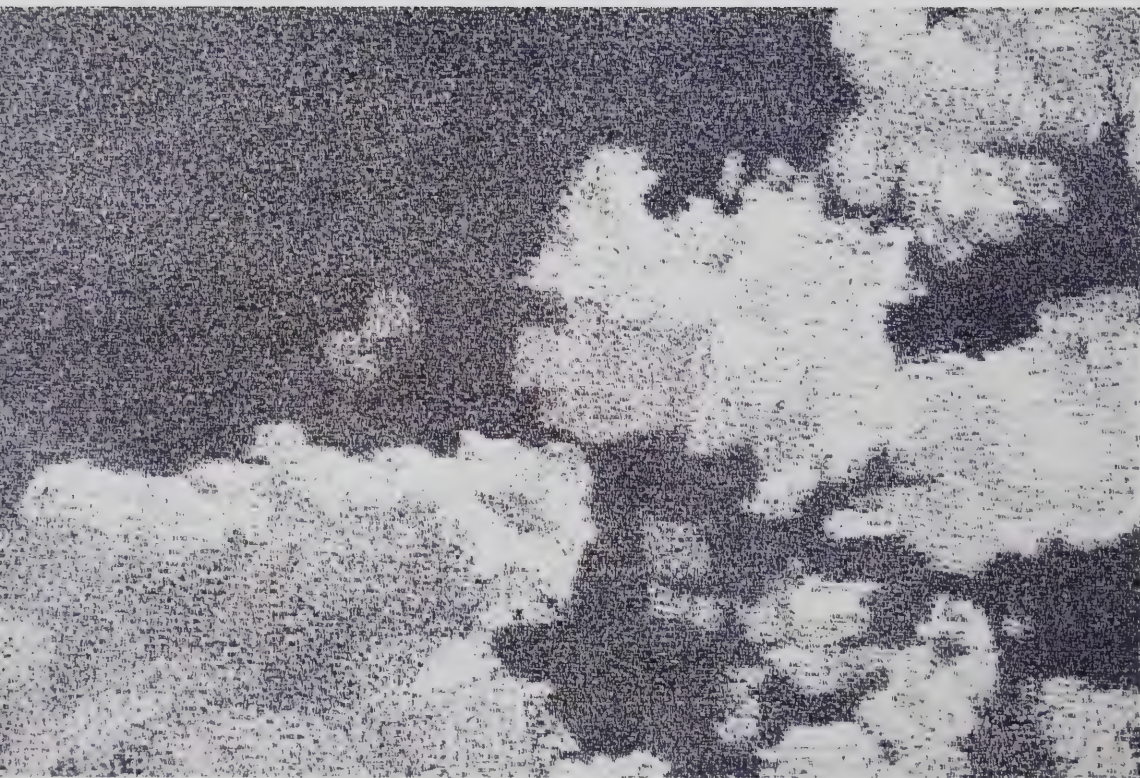
ABOVE

British Midland, 2001. Date stamps with oil on canvas, 300 cm x 500 cm. Courtesy MART, Museo d'Arte Moderna e Contemporanea di Trento e Rovereto, VAF-Stiftung Collection, Frankfurt/Main. This older work is from a time before Pietrelli added the range of dates in his titles.

RIGHT

Three views of *From 22 to 29 April 2002*. Date stamps with acrylic on wall, 140 cm x 110 cm. Courtesy the artist and Assab One, Milan.





ABOVE

From 15 to 31 December 2014.
Date stamps with oil on canvas,
180 cm × 180 cm. Courtesy the
artist and Simon Breitbard Fine Arts,
San Francisco.

RIGHT

From 26 April to 30 June 2015.
Date stamps with oil on canvas,
260 cm × 460 cm. Courtesy the artist.
Installation view of the solo show
L'ora del tè (Tea time) curated
by Costantino D'Orazio, MACRO,
Museum of Contemporary Art,
Via Nizza, Rome.

*Inset: Detail of From 26 April
to 30 June 2015.*





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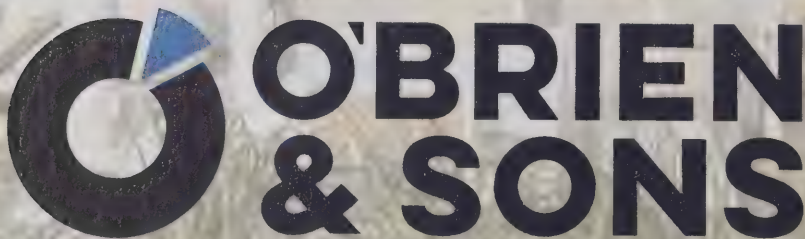
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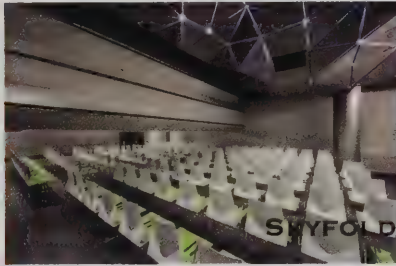
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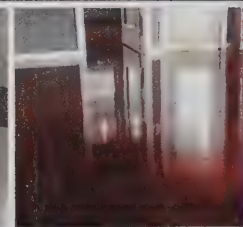


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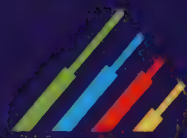


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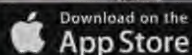
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A close-up portrait of Allison Iantosca, a woman with shoulder-length brown hair, smiling and looking slightly to the left. She is wearing a purple patterned top. The background is a soft, out-of-focus grey.

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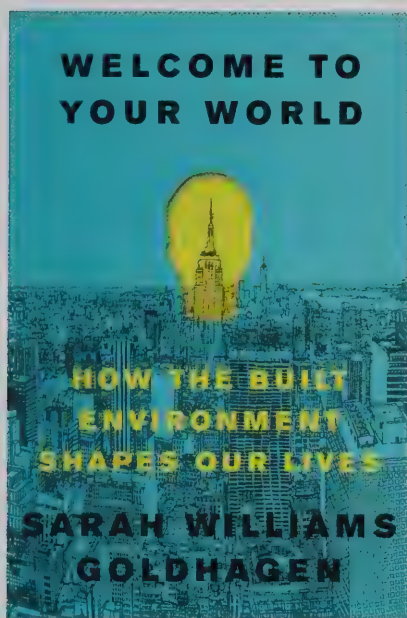
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BOOKS



Welcome to Your World: How the Built Environment Shapes Our Lives
 Sarah Williams Goldhagen
 HarperCollins, 2017
 Reviewed by Elizabeth S. Paden FAIA

Since Apollo 17's "blue marble" photo of Earth, perhaps no scientific images have captured public attention more than MRIs. The proliferation of the bright-colored graphics in popular media came just as neuroresearchers were expanding their focus from the pathology of disease to the scientific basis for human behaviors. Now, it seems, every month brings a new MRI demonstrating some equivalent to your brain on cocaine: sugar, love, winning the lottery.

But what's research without application? With *Welcome to Your World*, architecture critic Sarah Williams Goldhagen addresses the field's intriguing implications for the built environment. Readers interested in the subject may be familiar with the Academy of Neuroscience for

Architecture or the work of Boston architect Ann Sussman. There's no shortage of articles and conferences. Goldhagen offers something different: a coherent structure for sorting through myriad recent studies, a set of guidelines for designing a world more attuned to human cognition and experience, and a moral argument for doing so.

One of our best architecture thinkers, Goldhagen is an artful wordsmith and a generous writer, carefully defining technical terms, offering familiar examples of abstract concepts, and providing photos (most in color) of the buildings and places she describes.

Money, status, and sophistication are no protection from what Goldhagen dubs "sorry places." The public accepts the banal consequences because we are wired to favor the familiar, even if it is not in our best interest. Although some designers do create experientially rich environments—either through intuition or deliberate practice—our educational system effectively thwarts such efforts. Design studios favor object making, with the goal of attracting a professor's attention. Students have little exposure to fields such as sociology, environmental psychology, or cognition, which are essential to understanding experiential design. It's akin to MDs who do not study nutrition.

The brain, we now know, is wonderfully plastic, capable of adapting and responding to stimuli over a lifetime. Recent studies demonstrate the limitations of our traditional cultural assumption of a mind/body dichotomy. The mind and body are interactive parts of a whole, a system of continuous nonconscious processing that occurs simultaneously within three spheres: the body, the natural world, and the social world.

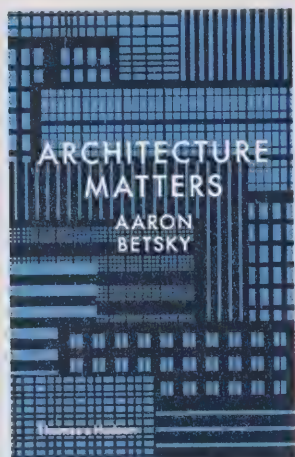
In countless examples, Goldhagen demonstrates that places not only affect

our immediate experience and cognition but also are deeply connected to memory and identity. Something as mundane as garbage odors on a city street can influence your interpretation of a problem that you are mulling as you walk to work. Long-term impressions are susceptible, too. A cogent analysis of Gund Hall at the Harvard Graduate School of Design (where Goldhagen was a professor for 10 years) explains why few alums ever express affection for their alma mater despite their respect for its programs.

Goldhagen offers some specifics based on cognitive research. Humans favor surface over form. They take pleasure in discerning patterns. They reject complex illegibility (hence the thankfully short life of Deconstructionism). They enjoy changeability, especially from natural light. Goldhagen applies her findings to an insightful analysis of the Scottish Parliament building by Enric Miralles. (For a case study without a plane ticket, visit Moshe Safdie's still-extraordinary addition to the Peabody Essex Museum in Salem, Massachusetts.) Indeed, one quiet success of *Welcome to Your World* is its development of a yardstick for future architectural criticism.

Why is any of this important? Millions of people are now living and working in "non-place places," built for expedience and profit. Impoverished environments are like cages, depriving us of health and well-being but, more shockingly, of the ability to reach our full capabilities. In this, Goldhagen expresses no doubt: "Experiential design is not optional." Her readers will share her conviction.

ELIZABETH S. PADJEN FAIA is an architect and writer. She was the founding editor of *ArchitectureBoston*.



Architecture Matters

Aaron Betsky

Thames & Hudson, 2017

Reviewed by Christina Marsh AIA

Part memoir and part manifesto, *Architecture Matters* draws from Aaron Betsky's diverse experiences within and engaging with the profession. Written to appeal both to the architecture community and to a general audience, the book seeks to define not just the importance of architecture in the world today but its future trajectory as well.

Written in an accessible, conversational tone, this series of concise essays covers a wide range of topics, with some essays sequentially building on one another, while others meander down side paths. And it is perhaps best to come to this book with the intention of meandering. Betsky, dean of the Frank Lloyd Wright School of Architecture, opens that approach to readers in the end notes, writing: "This volume does not pretend to be either an academic statement or a rigorous analysis of architecture. Rather, it is a recording of how I learned to love architecture and what I learned along the way." If you accept this premise and embrace the book as a series of musings and recollections rather than a finely tuned argument, it becomes a pleasurable, intriguing read.

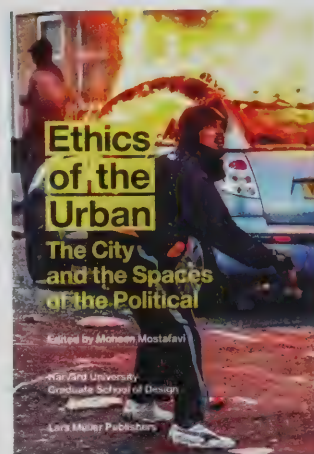
The most resonant moments occur when the idea of memoir and manifesto are deftly intertwined. The book opens with just such a recollection, when Betsky describes the transformational experience of visiting Gerrit Rietveld's Schröder House in the Netherlands. A high school student, he was

invited to see it at the behest of his teacher, a friend of Mrs. Schröder. The palpable awe of the skeptical high schooler, as he discovered the power of the home's design, sets the journey that the reader is about to embark on. Other such recollections, of an experience or a building that reveals an essential premise of architecture, are poignant moments that punctuate the book.

Betsky also seeks to cast the net wide and take on a series of topics that explore the definition of architecture. I appreciate the essays that call for architecture to take on neglected territory. He posits that a focus on monumentality and perfection has limited architecture's reach and its future relevance. Architecture needs to broaden its definition to engage with temporary architecture, the condition of sprawl, and the planning and organization of cities and towns. A series of essays delves into bricolage as a methodology, another into the use of data and "deep planning," and a third set explores alternative ways of using computational power. The final series of linked essays focuses on architecture's ability to create and inspire awe.

Given the unique formatting of the book, and its premise of being a collection rather than a cohesive argument, one begins to toy with the idea of transforming the order of its mini-essays. Would this reordering create a completely different book, a different argument, or a different takeaway? By the time the reader reaches the final pages, the idea of a series of recollections begins to fight the trajectory that a book format, read over time with a beginning, middle, and end, naturally sets up. Concluding with how works of inhabitable art better capture the essence of architecture than buildings do runs counter to the promise of a more collective, collaborative practice outlined earlier in the book. So be sure to take Betsky's invitation of happy hunting to heart, reorganize as you see fit, and conclude by revisiting your favorite parts of the journey.

CHRISTINA MARSH AIA is a founding principal at Atelier et Alia, an architecture, research, and design firm that creates innovative, contemporary design solutions.



Ethics of the Urban: The City and the Spaces of the Political

Edited by Mohsen Mostafavi

Lars Müller Publishers, 2017

Reviewed by Emily Grandstaff-Rice FAIA

"Ethics travels along a Möbius strip of meaning. Sometimes it describes the maintenance of consensus around stated principles. Sometimes, in a partial inversion, it describes the maintenance of dissensus around a necessarily indeterminate struggle with circumstance and evidence," writes architect Keller Easterling in one of 16 essays in this collection exploring the ethical and political implications of urban space. Grouped around themes of cities and citizenship, monuments and memorials, neighborhoods and neighborliness, public space and public sphere, borders and boundaries, these essays are a continuation of Harvard Graduate School of Design's 2012 conference of the same name.

A common thread is the tension between the ethical responsibility of citizens toward the creation of shared space and the governmental policies that build it. Through a combination of written and photo essays, democratic struggles are presented with the city as theater and citizens as actors. Although there are recent references such as Ferguson, Missouri, and the Arab Spring movement, I found myself wondering how the authors would address 2017 events, such as the citizen action to remove Confederate statues in New Orleans or the popularity of Kristen Visbal's *Fearless Girl* statue in

the public realm of New York City's Financial District. "Cities have distinctive capacities to transform conflict into the civic," writes sociologist Saskia Sassen. While some public monuments serve to provide the underserved or marginalized a voice, others—through their representation—reinforce oppressive meaning and memory.

In an honest, well-written essay about the realization of the World Trade Center Memorial, architect Michael Arad describes his discovery of community and belonging in the public realm immediately after September 11 and the complexity of combining the sacred and the everyday into a public memorial. He writes, "Design is always about dealing with constraints creatively; design without constraints is pointless, though design with nothing but constraints is impossible." His description of how community input and the construction process enhanced the design is one that all aspiring architects should

read. "Design is a process guided by clear direction," says Arad, "but open to change and discovery."

Most of the essays deal with the role of the political agent in shaping civic space. In "The Fair City: Can We Design Neighborhood Equality?" professor Robert J. Sampson draws a connection between the concentration of socioeconomic and racial isolation with perceived adverse neighborhood characteristics. Inequity in the United States is reinforced when residents choose to live close to those who share the same values, which he terms "the social matrix of adversity." These individual choices have collective implications on neighborhood policy, funding, and organization. In the context of the Imagine Boston 2030 Plan, for Boston to be the fair city of the future, it "will take efforts as persistent as the inequality it seeks to reduce," says Sampson.

Two essays directly address ethics and the role of democracy in the spatial realm.

Architectural historian Michelle Provoost questions whether the physical elements of a city reflect the citizens' values or if the level of democracy is determined by the ways in which cities are conceived, managed, and built. She contends that we often look at iconic buildings as reflections of our civic values, but small-scale, bottom-up initiatives serve an equally important democratic purpose.

Particularly striking is the argument that Sassen raises about the urbanization of war. Despite cities emerging as strategic economic and political targets of violence, "coalitions [bring] together residents who may have thought they could never collaborate." Political theorist Chantal Mouffe terms this "agnostic pluralism"—recognizing that though our differences may define us, as a collective we can create ongoing democratic efforts to face future urban challenges.

EMILY GRANDSTAFF-RICE FAIA, a senior associate at Arrowstreet, was recently elected 2018–2020 at-large director of the American Institute of Architects.



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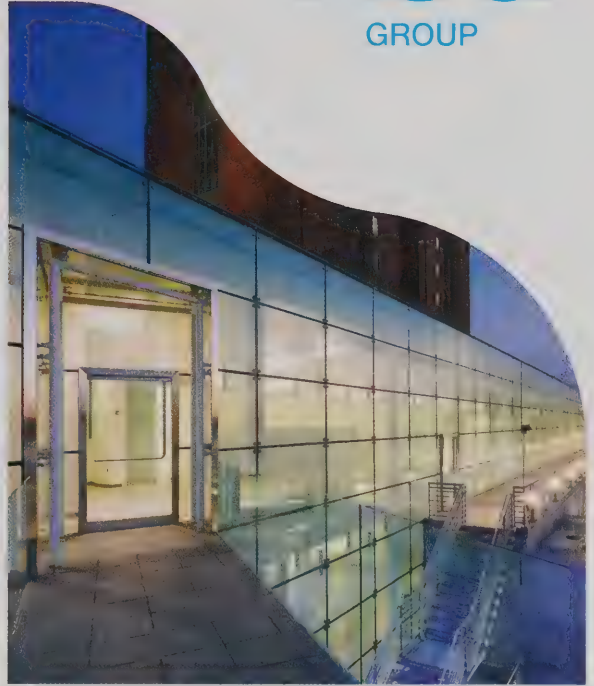
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MY BACK PAGES

by Jim Stanislaski AIA

For those who read nonfiction books, you know when you're in the middle. You are reading along, then the photos and maps show up. It's a milepost you know is coming, but somehow, it sneaks up on you. Twenty years ago, I entered the architectural profession, and it's likely I have 20 or more to go. I'm now squarely in the middle of my career, reflecting on the story arc that brought me here, while looking forward to the plot twists to come.

As architects and designers, we are crafters of stories and shapes. When we interview for projects, potential clients don't want a dry recounting of our past projects—they want to hear compelling

stories: how we solved a problem, met an impossible challenge, delivered an unexpected result. These story lines play to an intrinsic human desire for a memorable, juicy narrative.

Designers arrange shapes—they're one of our creative raw materials. Often, a project starts as simple forms that we push and pull to create space and place. In kindergartens as well as architectural offices around the world, there is a visceral joy in drawing a known shape, whether realized in fat crayon or 3-D computer models.

When I graduated from Syracuse University more than 20 years ago, Kurt Vonnegut, one of my favorite

storytellers, gave the commencement address. His wit and irreverence left its mark, and I had to learn more. I came across his "shape of stories" lecture, his master's thesis proposal, which was rejected because it was too simple.

Vonnegut contends that all stories have shapes that can be visualized on a simple graph. The vertical axis tracks the journey of the protagonist, with ill fortune at the bottom and good fortune at the top. The horizontal axis is time, beginning to end. There are prototypical shapes to our most beloved stories, which transcend time, cultures, and geographies. Commercially successful tales have common origins.

As a visually minded person, I find it interesting to apply this graphic overlay to the rich stories all around me. There are stories of our personal and client relationships, our careers, our projects, and our communities. Most good human stories have a beginning, middle, and an end—a satisfying structure that you can hang nearly anything on. But the story of a city is different. With its debatable beginning and unseen end, the story of a city is more complex and lacks a central protagonist. The narrative is shaped by its people, politics, institutions, and architecture. For Boston and most cities, the fortune arc has its ups and downs, moved by ever-changing forces.

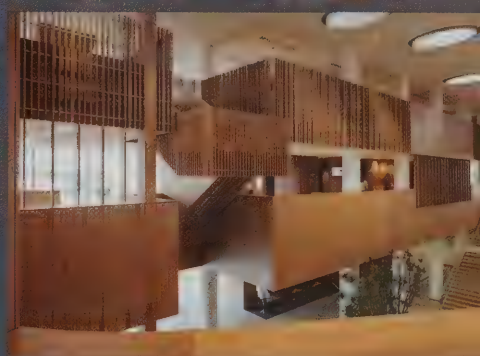
Balancing on my midcareer fulcrum, I can appreciate the role the design professions have in shaping Boston's story and helping solve our biggest problems. One of Vonnegut's tips on how to write a good short story is: "Be a sadist. No matter how sweet and innocent your leading characters, make awful things happen to them—in order that the reader may see what they are made of." As we stare down today's threats and dilemmas, we need to ask ourselves: What are designers made of, and how will our story be told 20 years from now? ■

ABOVE

Open book, 1993, by Hossein Valamanesh. Paper, binding, and ribbon, 48.5 cm × 52 cm × 12 cm. Art Gallery of New South Wales © Hossein Valamanesh. Photo: Jenni Carter/AGNSW



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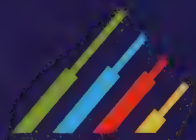
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Wonderspheres, by Mariko Kusumoto. Translucent polyester fabric that evokes deep-sea flora, 2 × 12 × 12 inches. Photo: Courtesy Mariko Kusumoto

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Drenched and Overgrown (detail), by Resa Blatman, 2016. Oil and latex paint on hand- and laser-cut Mylar, PETG, and Lexan; knitted yarn; plastic flora; 108 × 234 × 38 inches. Photo: Courtesy Resa Blatman



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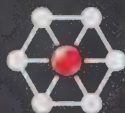
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WHAT'S THE MATTER?

In the mid-19th century, William Morris and fellow social reformer John Ruskin launched the Arts and Crafts movement as a response to the depredations of the Industrial Revolution. They extolled the virtues of handcrafted products and natural materials and decried mass production as dehumanizing and cruel. “All cast and machine work is bad, as work... it is dishonest,” Ruskin said. For these Utopians, most of society’s ills could be laid at the factory gate: Poor health, economic inequality, and the exploitation of workers were all due to rapid technological change, and a return to simpler times held the promise of redemption.

Sound familiar?

This issue of *ArchitectureBoston* comes at a time when Americans are again reeling from the effects of disruptive technologies, alienated from the meaning of labor, and dispirited by a glut of cheap, disposable manufactured goods. Add to that new worries about diminishing natural resources, climate change, and the potent legacy of industrial waste, and it’s clear that new approaches to building materials are needed.

But today’s reformers are going beyond a nostalgic repurposing of elements taken from nature, such as wood and clay, to invent materials from the stuff of life itself: shrimp shells, silk threads, mushrooms, algae. In “Organic Chemistry” (page 40), Blaine Brownell introduces us to one brave new material: a biodegradable, compostable alternative to plastic made from cellulose and water—so safe it’s edible.

Rather than rail against progress, architects and designers are enlisting science and technology in the quest for more natural, less toxic, more responsible materials. New forms of cross-laminated timber (stronger, safer, more versatile) are no less noble for being engineered in a lab. Manufacturing tools and technologies from the 3-D printer to the laser cutter can recruit new materials into the builder’s repertoire or make old materials behave in extraordinary ways.

It’s unlikely that architects and builders will ever trade in the tactile joys of sanded wood or cut stone for some microbial goo. But a reconciliation of machine and maker—between traditional craftsman and digital fabricators—is possible, as Stuart Kestenbaum discovers in “Craft Brew” (page 30). “What connects [the] two groups are ingenuity and a relationship with materials,” writes the former director of the Haystack Mountain School of Crafts, “a human story that is ancient and new at the same time.”

Calculating the cost-benefit between innovative and familiar materials isn’t easy. Concrete is the most heavily used material on earth, and the industry is the third-largest contributor to carbon emissions after cars and coal-fired power plants. Because it is so heavy, it takes more energy to transport. Because it is so durable, it isn’t easy to recycle: Most demolition waste is concrete, accounting for nearly one-third of all landfills. But today, concrete can be coaxed into thin, flexible panels, or even sculpted, as technicians search for ways to preserve the material’s useful qualities while minimizing its baleful effects. And before we tear down everything constructed before the first Earth Day, it’s worth remembering that no building is greener than an existing one.

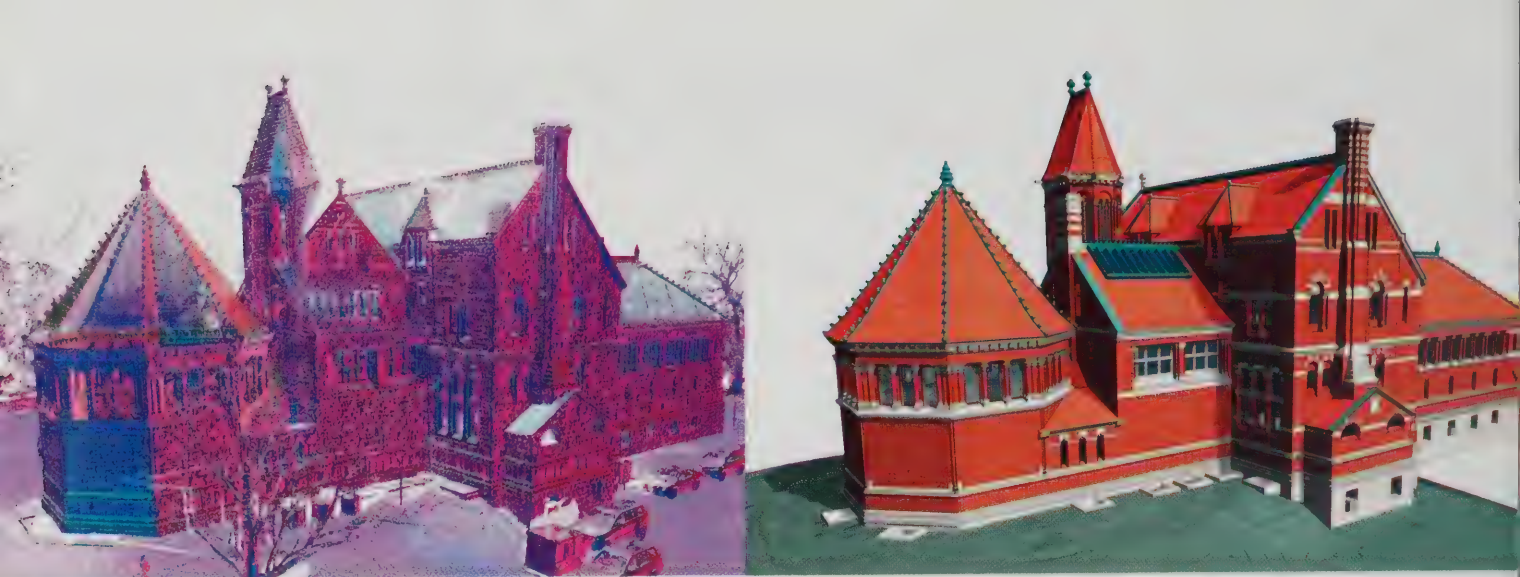
Among their many properties—strength, weight, flexibility—materials possess the gift of conversation: They speak to us, often in metaphor. Granite, marble, or other stone connotes solidity and power, so it’s often the choice for government buildings and banks. Glass suggests transparency and light, increasingly seen in public libraries. Local materials such as bamboo or rammed earth speak of respect for tradition and history.

What story will a building made of mushroom fungus tell? ■

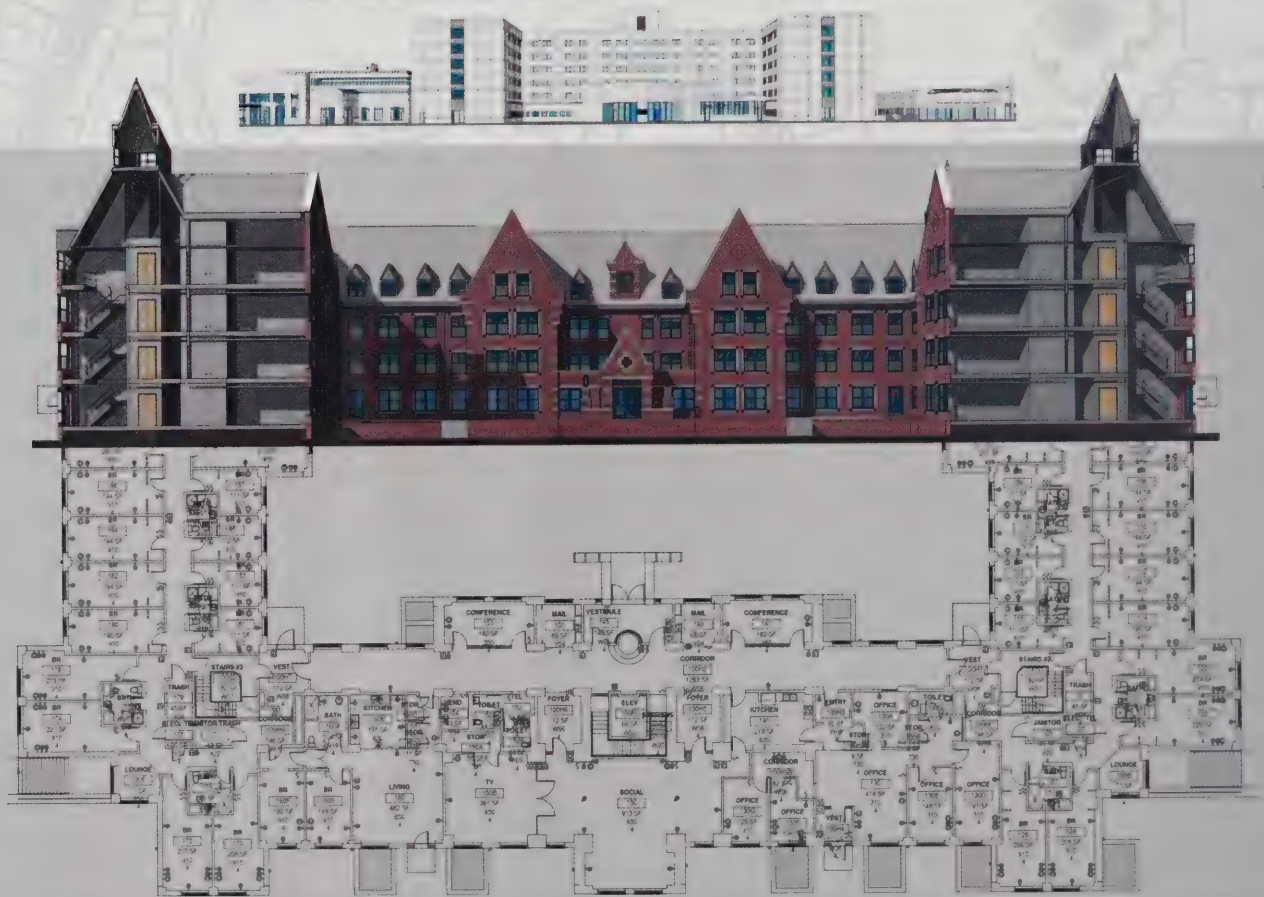
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ON “AB20” (FALL 2017)

Cities are conversations: stone and story, tower and shadow, harbor and wave upon wave. That Boston’s foundation is its history—and its histories—doesn’t go without saying, especially here, where we cherish the right to speak out against as well as speak up in support. Bring together history with people alert to each other and to that which surrounds them, and the present is rich.

ArchitectureBoston’s founding editors’ panel (“Present at the creation”) illuminated this process, as the participants spoke of how they hoped to design a publication that might endure because it was open to change. Their discussion offers several points of entry, and as a writer who is not an architect, I appreciate the big tent/many voices approach.

It moved me to learn that my essay on the New England Holocaust Memorial, written 20 years ago now for this magazine, changed Elizabeth Padjen’s firmly held view on the memorial’s then-controversial siting in the center of one of the most historic sections of Boston. The topic of where we want (and how we want) to see history embodied is ever a part of what a city is. And it’s no small matter that the siting of monuments is present once again as a source of vigorous and at times violent debate. What do we do with monuments based in a history seen now from numerous perspectives to be abhorrent, exclusionary, despotic? Do we raze the past, even if we can’t demolish the acts it held? Do we cart our reviled/revered monuments into museums as if they are merely art? Or might we regroup and redesign, and recall and think ahead about how to neighbor the past with the present? Surround the once championed with the once-victimized, leave the tyrants in place, and alongside them raise their survivors? It’s our relationship to history and to our time today we must talk about.

How do we create a community of conversation? A magazine? A city? A big tent?

MARCIE HERSHMAN

Author, Tales of the Master Race
Brookline, Massachusetts

Matthew Kiefer (“20/20 hindsight”) did a beautiful job describing how we got to where we are. Boston is changing, and our harbor has always featured prominently in our evolution. We need to help make the changes benefit as many of us in as many ways as possible.

From Boston’s early history, the city’s push for progress altered the landscape of the harbor. Through the filling of numerous bays in the early-19th century, Boston grew from a settlement to a successful trading port to a thriving international center of innovation, commerce, and tourism.

Irony would have it that the very thing that allowed the city to grow into “the Hub” is the very thing that threatens it today. As Kiefer points out, the investments in our waters, the Harbor, and the Charles River cleanup unlocked economic potential and helped lead to the development boom in waterfront neighborhoods like the Seaport and East Boston. And yet the infrastructure in these neighborhoods is buckling under the weight of increasing population density and a parcel-by-parcel development strategy that fails to adopt a comprehensive approach to planning. Traffic-gridlocked streets beg for broader transportation options. The threats of climate change in sea-level rise, urban heat islands, and increased precipitation demand the relief afforded by open green space and barriers along the water wherever possible. Even our “gritty postindustrial waterfront” working port needs support and creative visioning to continue its maritime



traditions and increase resiliency in the face of storms like Hurricanes Harvey and Irma.

As the region’s largest natural resource and public open space, our harbor, tidelands, and islands are an invaluable economic driver and deserve the time and effort needed to ensure we plan for all aspects of the future.

KATHY ABBOTT

President and CEO, Boston Harbor Now
Boston

I enjoyed reading Matthew Kiefer’s retrospective on the last 20 years in Boston and our potential for the next 20. As we hold conversations about possible infrastructure investments, it is important to remember the context in which we are operating. In 2016, Boston was ranked No. 1 in income inequality based on an analysis of 2014 census data by the Brookings Institution. At the same time, in an analysis done by the World Bank of coastal cities with the highest risks of flood damage, Boston ranks in the top 10 globally. The impacts of climate change, like sea-level rise and extreme heat, will disproportionately affect those with the least resources to rebound.

The center I run at the University of Massachusetts Boston is focused on urban resilience and this intersection of inequity and climate change. We aim to support the development of climate-adaptation efforts that take the different needs of all residents into account in long-term city planning. This challenge is particularly great in a place like Boston, given our

economic inequity and vulnerability to sea-level rise and coastal flooding. To ensure our vibrancy as a city, Boston needs to not only prepare for climate change impacts but also make sure that our planning efforts address our current equity challenges instead of amplifying them.

REBECCA HERST

Director, Sustainable Solutions Lab
UMass Boston

The title of Steven Cecil's "A tale of five cities" immediately recalls the famous first lines of Charles Dickens' *A Tale of Two Cities*: "It was the best of times; it was the worst of times." Dickens could have been describing today's realities. Although cities have been on the upswing, challenges still abound—many of which are discussed in AB20—including housing affordability, reliable transportation, job creation, and social equity. Add to this natural disasters like Harvey and Irma, and it's easy to worry. But what if we focused on the positives to address our daunting challenges? What would it take to turn climate change into an opportunity?

To start, let's be smart about our investments. Go beyond just building bigger walls and think instead about integrated, multibenefit approaches—where flood-management solutions are also economic-development catalysts, community open space, and green stormwater infrastructure. Let's leverage climate-preparedness investments to create better, more equitable neighborhoods. Designers and planners, in particular, are uniquely positioned to help communities craft these systems-based solutions.

As a planner who works on environmental and economic resiliency around the country, I'm excited to see Boston leading this thinking. In 2013, Sasaki Sea Change research invigorated a public-facing conversation around sea-level rise. More recently, working on *Climate Ready Boston*, I could see how far the conversation has evolved in just a few years. The City released the report

last December, recommending a holistic approach to adaptation. It's already translating into action that will help us better prepare for future climate change while simultaneously creating better places to live.

The next two lines of Dickens' tale: "It was the age of wisdom, it was the age of foolishness" are far less familiar but equally apt for our times. FEMA [the Federal Emergency Management Agency] finds that every \$1 spent on preparedness/mitigation saves society \$4 later on. For cities around the country, Boston included, the question is whether we can be disciplined enough to invest wisely today for the change we see coming our way.

JILL ALLEN DIXON

Senior Associate, Sasaki
Watertown, Massachusetts

I read the engaging compilation of interviews, "The kids are all right," with interest and delight. The combination of hardheaded realism about society's many challenges paired with the boundless optimism of how we, as architects, can influence our collective future made for a hopeful portrait of the next generation of architects.

We have had the benefit of hosting two of these bright young minds at our firm. Caleb Hawkins came to us from Wentworth Institute of Technology and, just recently, Cyrus Dahmubed interned with us through the Northeastern University Co-op Program. Contrary to the cynicism that so often characterizes our national dialogue and the rumor that all millennials are entitled, my experiences with these two young men revealed bright, hardworking professionals with big dreams for a better future—and a plan of action. Right now, with the burden of climate change, economic inequality, political division, and so much uncertainty about the future of technology, these "kids" seem to be doing all right, indeed.

DAVID J. HACIN FAIA

Principal, Hacin + Associates
Boston

EDITOR

Renée Loth HON. BSA · rloth@architects.org

DEPUTY EDITOR

Fiona Luis · fluis@architects.org

CONTRIBUTING PHOTOGRAPHERS

Steve Rosenthal, Peter Vanderwarker

CONTRIBUTING EDITORS

Matthew Bronski PE, Matthew Kiefer HON. BSA,
Andrea Leers FAIA, Tim Love FAIA, David Luberoff,
Hubert Murray FAIA, William Rawns FAIA,
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IN THIS ISSUE



Photo: Courtesy Leers Weinzapfel Associates

Andrea Leers FAIA ("The source," page 22), principal of Leers Weinzapfel Associates, is an internationally recognized leader in urban, campus, and civic design. She is the former director of the Master in Urban Design Program at the Harvard Graduate School of Design and has taught at Yale, the University of Pennsylvania, the University of Virginia, and the Tokyo Institute of Technology.



Photo: Susan B. Webster

Stuart Kestenbaum ("Craft brew," page 30) was director of the Haystack Mountain School of Crafts in Deer Isle, Maine, for 27 years, leaving his position in 2015. He is the author of four books of poems, most recently *Only Now* (Deerbrook Editions, 2014), and is currently serving as Maine's poet laureate.

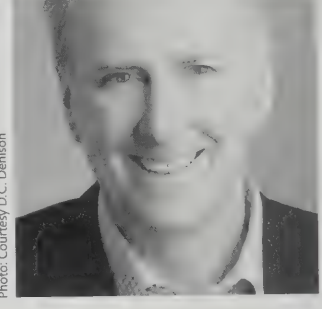


Photo: Courtesy D.C. Denison

D.C. Denison ("Economy of scale," page 34) is senior editor/technology at Acquia, a Boston-based digital experience company, and a contributing editor to *Make:* magazine, the bimonthly bible of maker culture. He also coedits the *Maker Pro Newsletter*, which covers maker-focused start-ups, products, incubators, and innovators.



Photo: Gudmundur Brynjarsson

Blaine Brownell AIA ("Organic chemistry," page 40), an architect and former Fulbright scholar to Japan with a focus on emergent materials and applications, is an associate professor and director of graduate studies at the University of Minnesota School of Architecture. He is the author of the three-volume *Transmaterial* series (Princeton Architectural Press).



Photo: Courtesy Goody Clancy

Jean Carroon FAIA ("The dark side," page 60) is a principal at Goody Clancy and the author of *Sustainable Preservation: Greening Existing Buildings* (Wiley, 2010). Her work focuses on the creative reuse of existing buildings to shape a healthy and resilient world.



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Opinions and Observations



Two new works at the deCordova Sculpture Park and Museum

51 Sandy Pond Road, Lincoln, Massachusetts

Two recent additions to the grounds of the deCordova offer a remarkable and riveting contrast in attitudes toward the sculptural, natural, and architectural realms. JaeHyo Lee's 0121-1110=113035 (*Lotus*), on view through July 1, 2018, is an 18-foot-tall conical sculpture made from discarded pieces of chestnut wood. This beautifully crafted form has been carved from chunks of wood that have been charred, bolted together, and then shaped into a perfect conical tower. The pure geometry of the cone intersects the organic forms of natural tree trunks, resulting in a truly mesmerizing work. You can get up close, peer into the dark interior, and get lost in the charcoal spaces. Then, back on the surface, you lose your bearings in the meandering lines and warm colors of tree rings that distort into strange amoeba-like shapes, which you have never seen before in wood. These forms have an almost cosmological geometry that suggests a range of scales from cellular organisms to invisible magnetic waves to the interactions of galaxies.



TOP

0121-1110=113035 (*Lotus*), by JaeHyo Lee, 2013. Chestnut wood. Photo: Courtesy Cynthia-Reeves

ABOVE

Hawaii California Steel (Figure Ground), by Letha Wilson, 2017. UV prints on Cor-Ten steel, 110 x 76 inches. Photo: Anchor Imagery, courtesy of the artist

About a hundred yards away stands *Hawaii California Steel (Figure Ground)* by Letha Wilson, a study in materials both intensely real and magically illusional, on view through May 31, 2018. Eight-foot-tall sheets of rusted steel have been stood up, cut, folded, and welded together—but only after the application of two photographic images into the very surface of the steel. Palm fronds from Hawaii and a detail of rock from Colorado cover the surfaces of one side of each steel panel. From one direction, the images blend into the landscape and take on a certain kind of camouflage; from the other direction, the natural surface of rusting steel suggests the sculptures of Richard Serra. The result is a complicated play of deceptive imagery and honest materiality.

So on one hand (Lee), we have the celebration of material and crafts in the carving of forms that reveal hidden secrets within the wood. On the other (Wilson), we have a thoughtful investigation of material and image that suggests ambiguities outside the material. Both pieces stand alone as wonderful examples of contemporary sculpture, but installed as they are in dialogue with each other across the road at the deCordova, they present a truly fascinating discussion on the nature of materiality and its perception.

DAN HISEL AIA has a practice in Arlington and teaches design at Wentworth Institute of Technology.

GENIUS LOCI

Weeks State Park

Lancaster, New Hampshire, is located in the Great North Woods—that territory north of Franconia, Crawford, and Pinkham notches that few vacationers and even fewer day-trippers from Boston venture into. It is inhabited by trees, pristine ponds, and moose, with views that stretch west to the Adirondacks and north into Canada.

As you drive north, the mountains reveal themselves slowly. They begin as foothills and become genuine mountains once all signs for the Lakes Region cease. In Franconia Notch, the ridges enclose you and loom 1,000 feet above. Once you exit the northern end of the notch at Cannon Mountain and turn east on Route 3, you find yourself entering another world. Birch, maple, beech, spruce, and eastern white pines dominate the edge of the White Mountain National Forest. Eventually you see a small sign along the road at Mount Prospect: Weeks State Park.

The park is the former estate of John Wingate Weeks. I discovered this spot by accident on an exploratory drive north from my cabin in Bethlehem. Turn at the sign, and you wind up ensconced on a narrow road through dense trees for two miles to the main part of the estate. Weeks amassed a fortune in banking in the late 1800s and went on to serve

as the mayor of Newton, Massachusetts, a US congressman, a senator, and finally Secretary of War. Bostonians know him best as the inspiration for the Weeks footbridge, a landmark under which I have spent many hours rowing on the Charles River. While in Congress, Weeks was best known for sponsoring what became known as “Weeks Law,” which authorized the government to purchase eastern lands for preservation. It gave us the White Mountain National Forest and helped end the destructive logging that had all but deforested much of New Hampshire by 1900.

When you reach the top of the road, you are greeted by the eclectic lodge—fieldstone and stucco with an odd fairy-tale-like clipped tile roof—that does not hew to New England vernacular. Inside, the lodge comes to life. The entire second floor is one large room, with a ceiling that consists of dark wood scissor trusses and two enormous granite fireplaces at either end. Weeks owned this small mountain and this room, which commands a 360-degree view from Mount Washington to the green mountains of Vermont and overlooks his hometown. Another striking feature of the room is the large windows of unmulioned glass, a midcentury feature in a decidedly older building. If you

focus on the view, the bookcases, and the original simple wood furniture pieces that remain, you can picture Weeks holding court with his hunting companions in front of a roaring fire to take the chill off a November night. Weeks loved his boyhood town and the Great North Woods and chose to finish his life there. He died on July 12, 1926. “He had about him,” wrote President Calvin Coolidge, “the vigor of the hills combined with the culture of the City.”

North Country is a place of both cultures intertwined. It is a retreat for many, a way of life for some. The palette is green, blue, and white, with a healthy dose of gray granite. Towns huddle along riverbanks. The ever-changing weather colors the mountain ranges in a gentle light or in intense gray; the coral and pink in the sunset sky fades the trees to deep purple. Time seems to cease. Hunters, anglers, Appalachian Trail hikers, skiers, and survivalists find common ground here and breathe the free air.

REBECCA BERRY AIA is president of Finegold Alexander Architects.

BELOW

Second-floor interior of the lodge at Weeks State Park. Photo: Courtesy New Hampshire State Parks





SEEN

Worcester

Exploring a collision of old and new, my “Brick and Glass” project elevates Worcester’s banal architectural settings into surreal, subtly haunting scenes. Over the course of two years, I worked between midnight and four in the morning, consistently visiting a handful of subjects and sites each night. Low-hanging clouds between rain would reflect the city’s sodium vapor and LED street lights, streaking the sky with orange, magenta, and cyan.

This image was taken at a location I frequently visited: a parking lot squeezed between a middle school, factory, and warehouse. In the many months before taking this shot, I learned to see the subtle aspects of the structures and the

barren landscape around each of them. In this barrenness, I found that small and unusual details were amplified. A 15-minute exposure onto a large sheet of film helped magnify the dim light, subtle textures, and gradients. I am still struck by the monolithic qualities of these buildings. Juxtaposed, their distinctive yet familiar façades are suspended as a dissonant conversation unfolds. In making this image, I felt that I captured the dynamic quality of Worcester’s architectural landscape, the old and the new interacting with each other and the viewer.

PAUL PUIIA is an artist currently based in Tucson, Arizona.

The Shape of the World: A Portrait of Frank Lloyd Wright

Telling the tale of one of the most celebrated and complex architects of the 20th century is no easy task. By identifying nature as Frank Lloyd Wright's principal source of inspiration and highlighting select projects, author K.L. Going and illustrator Lauren Stringer succeed in rousing the interest of young readers in Wright's life and work.

The twofold narrative depicts the architect in his infancy and then expands on his productive life, emphasizing his childhood interest in the world that surrounded him. By inviting readers to observe nature with fresh eyes, the story comes to life as an invitation to perceive the world differently.

The Shape of the World, published this year by Beach Lane Books to coincide with the 150th anniversary of the architect's birth, highlights curiosity and imagination as foundational elements for Wright. By focusing on young Frank's childhood interactions with and observations of his surroundings, the book celebrates his appreciation for the complexity and the beauty of the world and his ability to integrate them in his own work. The illustrations become key to the unfolding of the narrative by weaving together Wright's design motifs and his inspirations. Stringer straddles the pictorial and creative tracks of the story and situates us at the core of Wright's designs without compromising the playfulness of her style.

The story also makes a strong connection between Wright's mother's influence and his interest in architecture. As the story unfolds, one longs for a slower exposition of at least one of his projects, before the narrative arc pronounces Wright's life work as transformational.

The mixed-media illustrations are inspired by his work, and three sets stand out: one that depicts natural elements (raindrops, lightning, the river) by qualifying their attributes,

another that combines many of Wright's window-pattern designs, and a set that superimposes three buildings—Hanna House, Johnson Wax Headquarters, and the Solomon R. Guggenheim Museum—with elements of nature. Stringer transcends the descriptive in those sets and offers hybrid images, whimsically fusing nature and architecture in ways that are credible and engaging to young readers.

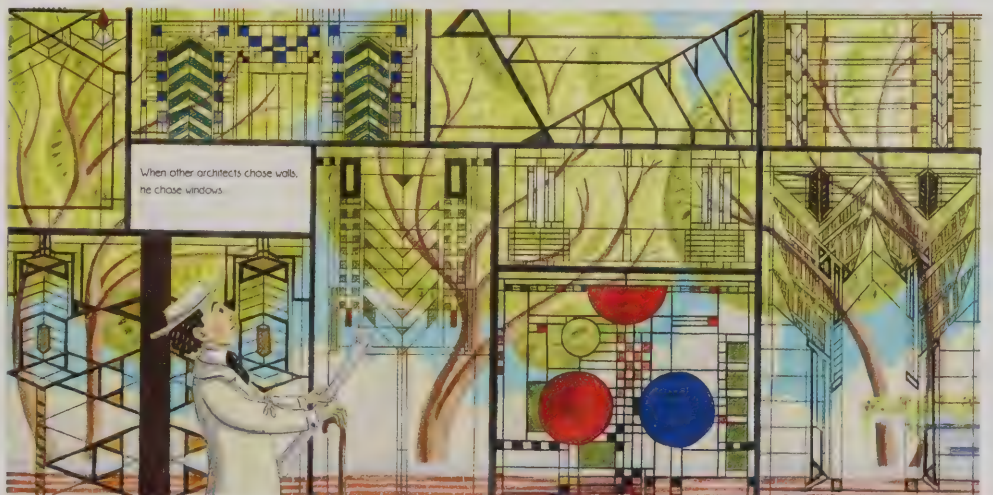
In addition to rendering a compelling portrait of Wright as an architect, the book becomes an invitation for exploring the world and channeling those observations into acts of creation. Going's emphasis on the combinatory nature of form, discovered through play, validates

a child's ability to make deductions that span the abstract and the natural and connects a young mind's cogitations to her tangible surroundings. The capacity to marvel at nature's complex beauty is not lost on adult readers, either, who might enjoy experiencing the venerated American architect through the book's simple words and charming illustrations.

PARI RIAHI AIA is an assistant professor at the University of Massachusetts Amherst.

BELOW

Panels from *The Shape of the World*, written by K.L. Going and illustrated by Lauren Stringer. Images: Courtesy Simon & Schuster Children's Publishing





Turn Park Art Space

West Stockbridge, Massachusetts

Opened May 2017

Turn Park, an old quarry turned sculpture park, is full of delightful surprises. The entrance to this creative complex for art, architecture, and landscape design features a seemingly simple white stucco building called the Gate House. Crossing this threshold, however, reveals a layered set of openings and passages. The open-air entryway is flanked by an art gallery on one side and a café-visitors center on the other. Look up to the ceiling and you'll see that a narrow cleft divides these two spaces with an interstitial gap opening to the sky.

In the bright white art gallery, your attention is again drawn upward, where diagonal bars of light are recessed into the ceiling. The far wall is interrupted by short steel treads that cleverly guide you back outside to discover a stairway intersecting the wall. Follow the staircase up to the roof terrace, and you'll find another inviting threshold: a glass bridge spanning the cleft buildings offering a view of the marble stone pavers below. Literal and phenomenal transparency collide in this enchanting detail. But the adventure has just begun. From here, a white path made of crushed marble and limestone meanders over

the curving green rooftop and crosses into the undulating hills of the property.

As a repurposed quarry, this 16-acre park features a small lake adjacent to a 60-foot cliff. Various knolls, crags, fields, and patches of forest have been landscaped into distinct rooms that beg to be explored. A diverse collection of sculptures punctuates these spaces. Some merge landscape and architecture, such as *Puerto*, by Gene Montez Flores, a velvety rusted steel gateway wedged in a small ravine. The weight and solidity of this sculpture stand in direct contrast to the shimmering curtain of reflective Mylar blowing in the aspen grove across the field. This temporary installation by artist-in-residence Michail Igoshin exemplifies the experimental nature of the park. Programming includes not only temporary and permanent exhibitions but also summer pop-up theater, musical performances, art classes, film screenings, and workshops for children.

Figurative sculptures by Russian artist Nikolai Silis can be found throughout the property. His surrealistic and curvilinear motifs have inspired both the design and concept of the park. A prominent sculpture of Don Quixote, set in the meadow near the entrance, signifies the hopeful adventurer and his pursuit of the fantastic.

Indeed, a utopian reverie permeates Turn Park. Its founders, Igor Gomberg and Katya Brezgunova, worked with architects Alexander Konstantinov and Moscow-based Ekaterina Vlasenko to develop their vision, which was then realized in collaboration with Art Forms Architecture, led by Grigori Fateyev. The resulting art space is an exquisite example of adaptive reuse, one that breathes new life into the abandoned quarry of West Stockbridge. From the twisting paths that transport you over, around, under, and through differing spaces, to the wooden toys left out on tables near the café, Turn Park encourages the imagination to mingle and merge with the environment.

SANDY LITCHFIELD ASSOC. AIA is an artist and assistant professor in the architecture department at the University of Massachusetts Amherst.

ABOVE

The stairs (left) that lead to the building's roof are made of steel and glass to allow light through. Photo: Dan Karp

The image on the right captures the spot at the entrance where two portions of the structure come together. Photo: Dmitry Gomberg

Courtesy Grigori Fateyev/
Art Forms Architecture

Michael Ford: Hip Hop Architecture

BSA Space, Boston

August 3, 2017

When thinking about the origins of hip hop, DJ Kool Herc and Grandmaster Flash are names that come to mind. Not for Michael Ford. As the packed room at the lecture hosted by the Boston chapter of the National Organization of Minority Architects, the Boston Society of Architects/AIA, and the BSA Foundation listened intently, Ford explained that he refers to Le Corbusier as the forefather of hip-hop culture. Corbusier had a utopian plan, which was rejected, to rebuild Paris with high-rise towers within a park-like setting. Robert Moses used the very same plans as a basis to create what Ford calls “the worst remix in history,” eliminating light-filled prisms and greenscapes and leaving behind dark, high-density towers that became the model for public housing in the United States. The inhabitant’s response to this built environment, best described by Grandmaster Flash in “The Message” and what Ford refers to as “the post-occupancy report of Modernism,” is what gave birth to hip-hop culture.

Through the lens of hip hop, Ford has been shedding light on the sociological and psychological impact of architecture on communities and the built environment, highlighting the effects of bad urban planning. He hopes this intersection of hip hop and architecture will serve to build better “incubators of culture” in the future. Earlier this year, Ford started the Hip Hop Architecture Camp, an initiative to engage under-represented youth and expose them to architecture and urban planning, using hip-hop culture as a catalyst.


Designed in collaboration with icons of the musical genre, the first phase of Ford’s Universal Hip Hop Museum in the Bronx along the Harlem River will feature a touring mobile museum, nicknamed “Hip Hoptimus Prime.” The project turns Ford’s mission into brick and mortar, with public housing above the museum, a riverfront park, a boutique hotel, retail, and an amphitheater. It strives, he says, to “remedy the injustices faced by people of color at the hands of Modernism.”

RIDDHI SANGHVI AIA is a principal at db2/ARCHitecture in Woburn, Massachusetts.

BELOW



Michael Ford working with students in an architectural studies class at a Cleveland high school. Photo: Lisa DeJong/The Plain Dealer



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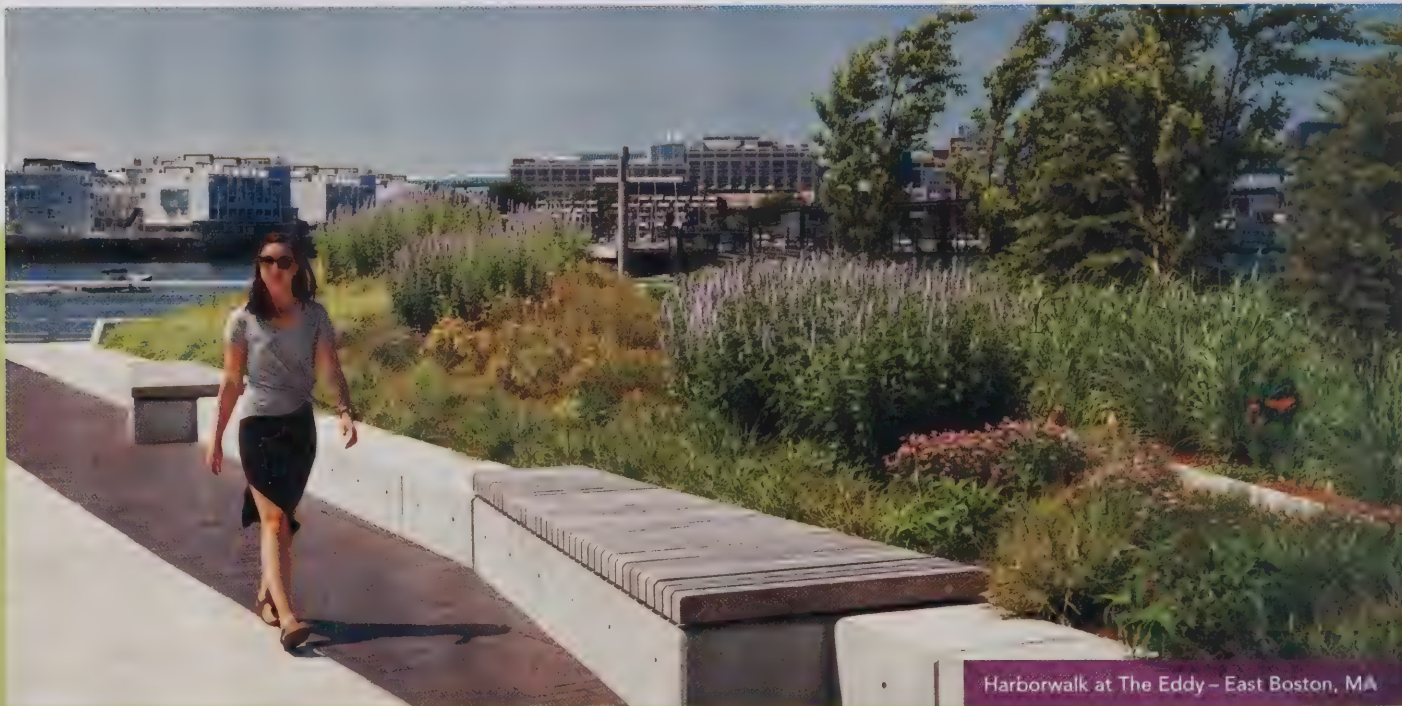
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BEST OF BOSTON HOME 2017, 2016, 2015, 2012, 2011, 2010, 2008 / BEST OF BOSTON 2017, 2007

WINTER 2017

Whether artisanal or digitally
devised, everything in the
built world begins with material.
In these pages, we explore how
designers' stock informs their trade.

FEAB

Shrouded Reef (detail), by
Resa Blatman, 2017 (in
progress). Oil on hand- and
laser-cut Mylar and Lexan,
232 x 96 x 5 inches. Photo:
Courtesy Resa Blatman



ABOVE

Botanical Sculpture #5 GOD, by Azuma Makoto, 2012.
Photo: Shiinoki Shunsuke; courtesy AMKK

THE SOURCE

**MATERIALS FUEL
THE ARCHITECT'S
IMAGINATION**

Early in my design career, I spent eight months in Japan on a National Endowment for the Arts fellowship, doing research on traditional and contemporary wood construction. Among the many activities I pursued during that time was the zen art of ikebana—flower arranging—as a meditation and art form. A foundational premise is that there are no inherently beautiful or ugly materials, only awkward and inappropriate uses. I carried this lesson into an attitude about materials in architecture. In our practice, we don't begin with a predilection for any given material; instead, we explore the fit between a material, its purpose, and its place. We dig deep to expose the properties of each material, its cultural connotations, and its inherent emotive qualities.

Material is at the heart of the architectural imagination. We can talk about architecture through many lenses: as part of the urban fabric, as a social engine, as a formal exploration. But material is fundamental to the realization of ideas and intentions. It is the matter, stuff, and substance from which a thing is or can be made—something you can feel, see, and relate to. It is critical for bonding architecture to the human experience, to joining it to the surrounding setting, and for generating meaning and significance.

Our choices today span an enormous range from “old” materials—stone, brick, concrete, wood—which are relatively heavy and massive, to “new” materials—metals, glass, plastics—which are relatively light and transparent. Old materials convey stability, timelessness, nobility, and permanence, whereas new materials convey lightness, ephemerality, and mobility.

Architects around the world whose work is fundamentally inspired by material investigations abound in both spheres. Tod Williams Billie Tsien in New York, for example, is extraordinarily inventive with massive materials, working with concrete, brick, and stone in ways that create an architecture that is grounded, embedded in the earth, and aspiring to permanence. At the Barnes Foundation in Philadelphia, the firm responded to the challenge of rehousing an extraordinary personal art collection by creating “a gallery in a garden” with two long solid volumes for the education programs and the collection, framing an elevated light box for gatherings, events, and repose. The solid exteriors are clad in a woven pattern of limestone, which suggests the solidity and nobility of mass stone, reinterpreted in assemblies of metal-framed thin stone panels.

In our own work on the Design Building at the University of Massachusetts Amherst, we explored cross-laminated timber (CLT) construction—a modern version of the “old” material of heavy timber—as an optimal fit for the client and its context. The building program had as a primary goal the demonstration of sustainable environmental design. Research in engineered timber by the faculty at this rural campus made it a natural choice as a pedagogical opportunity. The glu-laminated columns and beams, CLT floor and roof slabs, and wood-and-steel zipper trusses for the atrium create a space of solidity, natural beauty, and warmth. Our work with contemporary mass timber extends

and redefines traditional heavy timber, long used for barns, industrial sheds, and warehouses. The spaces, shaped by wood with its inherently sustainable origins, create a feeling of strong connection to the earth and to nature.

Lightweight materials have been the subject of intense investigation since the mid-20th century. In the past two decades, that investigation has accelerated. The Museum of Modern Art's 1995–96 *Light Construction* exhibition and Harvard's 2002 *Immaterial/Ultramaterial* exhibition both attest to the strong interest in expanding the limits of lightweight materials and their fabrication. Fumihiko Maki in Tokyo is an extraordinary innovator of light construction, exploring the potential of metal siding and screening. His many inventions with new profiled metal panels, tubular screens, and layered assemblies span the cultural sensibilities of Japan and the West. At the MIT Media Lab in Cambridge, Massachusetts, a collage of metal screens, crisp panels, and glass on the exterior create a delicately adjusted scale for this very large building in a campus context. On the interior, transparency and translucency from the central atrium to the outer walls provide an environment suffused with light. As associated architects on the project, we were fortunate to participate in developing the subtlety and refinement of each material and its assembly.

Our own work in older urban and campus contexts has prompted us to explore the expressive potential of light metals—copper, stainless steel, and aluminum siding, perforated screening, and panels—in structures as diverse as museums, university buildings, and energy plants. At the Museum of Medical History and Innovation for Massachusetts General Hospital in Boston (a front door to the hospital complex at the foot of Beacon Hill), we chose to clad the building in copper siding. Facing brick townhouses and the nearby State House, the copper material responds in color to its context while providing a new texture, reflectivity, and lightness to the building. The long three-story street façade is clad in standing and flat-seam copper panels and copper-fritted glass, creating a strong presence despite its modest size. We have discovered that metal materials introduce a delicacy and refinement of scale, and make insertion of new structures into a dense context more graceful and distinctive.

For me, the search for the right material to express a building's human purpose and sense of place is paramount. The choice of material is a question of fit. Each project demands an exploration of material research, selection, and detailing to respond to context, to meet sustainable goals, and to evoke a compelling emotional impact.

My colleague Jorge Silvetti, a professor at the Harvard Graduate School of Design, put it well in his introduction to the *Immaterial/Ultramaterial* exhibition catalog: “Materiality is more than a technical property of buildings: it is a precondition that promotes ideas, creativity, and pleasure in architecture, and it guides us to the loftiest aspirations of theory.” To say it even more simply: Material makes an idea come to life. ■



MATERIAL WITNESSES

We profile five masters whose work testifies to the extraordinary ways in which **STONE**, **CONCRETE**, **BIOLOGY**, **WOOD**, and **GLASS** can render fabulous results.

STONE: JIM DURHAM

ROCK CLIMBING

by Cliff Gayley FAIA

Recalling our climb to the top of Zervreilahorn, the 9,500-foot peak overlooking the Vals quarry in the Swiss Alps, I appreciate what makes Jim Durham of Quarra Stone a unique force in the world. A stone supplier without a quarry and no particular stone to market, Durham combs the globe for new variations and sources. He is a consultant who can do as well as teach, a fabricator with a forte for computerized cutting and shaping. Exuberant and thoughtful, curious and proactive, he is focused on listening to and acting on the goals of architects who seek him out. "I think stone is different from other materials," he says, "because it is more of a place; it is a holder of meaning and of history."

Our path to Zervreilahorn began in 2002 with the defining moment in our firm's design of two new residence halls for Swarthmore College. It happened when we saw-cut a piece of Wissahickon Schist, revealing a hidden vibrancy within the split-faced rubble stone that defines the college's all-stone campus. The exposed grain of this metamorphic stone was both age-old and vividly contemporary, with lively waves and swirls, a graphic interplay of white on gray celebrating the natural variations and color range hidden within. Frankly, we loved it. Curious whether this new expression of campus stone could allow our contemporary design to engage with more historic structures, we asked Durham a burning question: Can we find a nonrubble metamorphic stone that captures this grain in taut, square-cut courses? It seemed like an impossible question, one that local quarries could not answer.

Durham embraced our query as an ongoing conversation, listening and probing, sampling known sources and seeking out new quarries, eventually finding an intriguing Swiss quartzite that looks remarkably like the saw-cut schist.

Bringing into the conversation Truffer AG (a family-owned quarry in the remote town of Vals, Switzerland), Durham orchestrated a period of due diligence, including quarry visits with full-scale stone mock-ups that we used to test the mix of stone, its range, and its randomness. "I love these moments," he said with a laugh, "working with people who are ridiculously demanding, with people who have 'not good enough' in their vocabularies." Conversations about randomness would erupt: How much variation is necessary to capture the naturalness of stone? How much randomness is too much? How do you achieve randomness without creating pattern, while managing a color mix from boulder to slab to cut pieces on pallets? Nerdy stuff for sure.

Without a strong sense of teamwork, these strategic conversations would have worn out our stakeholders. This is where the mountain comes in. There is nothing like a nine-hour climb, with ropes and everything, to bring representatives from the college, the contractor, Quarra Stone, the quarry, and the architects toward a common purpose. Even the town joined in by loaning our group climbing helmets, jackets, and hiking boots. "It is all about building trust," Durham says.

Looking back, he considers the project a watershed, defining a new "architect-centered" focus for him, repositioning his business model around change and innovation—whether chasing randomness at quarries worldwide, deploying computer robotic shaping tools to achieve complex curvatures, exploring translucency in stone, or applying the lessons of biomimicry. On the peak of Zervreilahorn, I told Durham that considering all his technical expertise and access to resources, what I appreciated most was his ability to really listen. "There is," he replied, "no better compliment." ■

CLIFF GAYLEY FAIA is a principal at William Rawn Associates, Architects.

RIGHT

Jim Durham: Stone "is a holder of meaning and of history."

Photo: Courtesy Jim Durham/Quarra Stone Company

Background: Swarthmore College Unified Science Center. Photo: © Jeff Goldberg/Esto



CONCRETE: SHAWN KELLER

POURING IT ON

by Mimi Love

"For me, figuring out how to build things is more interesting than designing them." Listening to Shawn Keller talk about wonky topics such as "fabrication tolerance modeling" can be fascinating. He clearly loves what he does; you can see it in the way he lights up when discussing different fabrication approaches. "Problem solving is the fun part." His father, Charles, started CW Keller in 1974 in the basement of his house. The younger Keller grew up in his father's shop and was always surrounded by tools. His passion for problem solving must run in the family.

I met Keller in 2008 while working on the Boston Harbor Islands Pavilion on the Rose F. Kennedy Greenway, long before digital fabrication was trendy. Along with Turner Construction, our firm was excited by the challenge of building this unconventional concrete structure—the first permanent structure on the Greenway.

The pavilion comprises two poured-in-place concrete roofs with complex curves. The roofs are designed to shed water from an upper roof onto a lower roof, and end in a tightly pinched scupperlike form that flows into a sculpted stone catch basin, much like the spout of a pitcher. We were interested in making the concrete roof structure appear as thin and lightweight as possible. We were also set on the roof being a poured-in-place structure to achieve a monolithic reading, as opposed to precast concrete composed of multiple pieces. This presented several technical challenges. We needed a digital fabricator, and that's where Keller came in.

CW Keller is a shop known for its early proficiency in linking Rhino modeling with computer numerical control (CNC) milling. His shop was also getting good at forming machined curved surfaces out of layers of plywood. Keller was psyched about taking our 3-D model and figuring

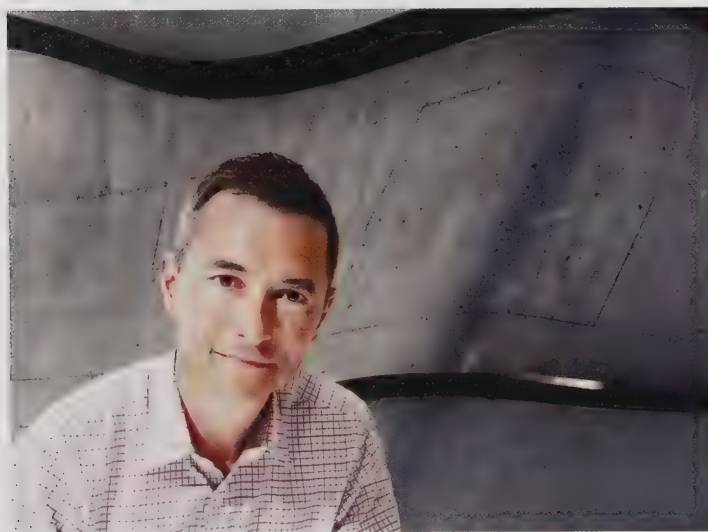
out how to divide it into individual panels that could be assembled in the field to form the continuous complex curved surfaces of the two roofs.

The underside surface of the roof was what we cared most about—it had to be as smooth and seamless as possible. Keller recognized that the plywood had to be extra thin ($\frac{1}{4}$ inch) to take the shape of the curvature; however, the tightly pinched scupper went beyond its bending tolerance. This is where Keller combined several vertically stacked plywood sheets and carved them to the shape described in the 3-D model. A series of wood ribs were then created to support the plywood sheets and take up the difference between the bottom of the curved surface and the top of formwork staging.

The design-fabrication collaboration allowed for a level of scrutiny and coordination that included defining the seam layout and identifying the location of screws to form a pattern. Although pouring the concrete in a single pour (yes, you have only one shot!) had its own challenges, I would argue that the formwork was the key factor in making it all come together.

Keller has further refined this fabrication tolerance modeling to much larger-scaled projects, including a concrete house designed by Steven Holl and the Sixth Street Viaduct for the City of Los Angeles designed by Michael Maltzan and HNTB. What is most amazing about Keller is his ability to take a simple concept and think about the appropriate medium (plaster, concrete, wood) to determine the best way to fabricate it—and to have the confidence that anything can be realized. ■

MIMI LOVE is a principal at Utile.



LEFT

Shawn Keller: "Problem solving is the fun part." Photo: Courtesy Shawn Keller/CW Keller & Associates

Background: Boston Harbor Islands Pavilion. Photo: Chuck Choi Architectural Photography; courtesy Utile

BIOLOGY: NERI OXMAN

NATURAL SELECTION

by Carole C. Wedge FAIA

One of my first architectural impressions as a child was Buckminster Fuller's dome in Montreal. Having always had a soft spot for it, I was drawn to a video of students conducting a laboratory experiment to see if silkworms could be used as biological printers to create the infill structure of a dome. That team is led by MIT Media Lab's Neri Oxman, whose research group focuses on material ecology, which considers computation, fabrication, and the material itself as inseparable dimensions of design.

Watching the team shepherd thousands of silkworms and seeing the poetic pattern created by the insects' efforts sparked my interest in Oxman's work. Where a typical design effort might start with context and budget, her methodology takes materials exploration to a new level: Products and buildings are biologically informed and digitally engineered by, with, and for nature.

When I met the Israeli-born Oxman in 2014, I was inspired by her evolution from architect to scientist; in 2016, I realized she was further pushing the boundaries of design when her keynote address at the AIA National Convention sounded like an aspirational session for NASA Space Labs. Oxman is part guru, part rockstar, and part explorer; she makes the rethinking of materials and processes seem so natural, yet she has had to push through many obstacles and stay restlessly inquisitive in her research pursuits.

Oxman's thinking is both organic and scientific. She looks at processes in nature to inspire new material considerations, describing her work as thinking about what parameters we need in a material first, then pushing the conversation to a "what if" place: What else could the material do, or what might it provide?

In a recent project, Oxman used chitin—a biological material found in the exoskeleton of crabs, butterflies, and the like—to answer these questions: What would design be like if objects were made of a single part? Would we return to a better state of creation?

She recalls her inspiration to work with chitin. It was 2012, and she was working on the Silk Pavillion, a project of her Mediated Matter group that explored the relationship between digital and biological fabrication using swarms of 6,500 silkworms. Meanwhile, Harvard bioengineer Don Ingber, director of the Wyss Institute, was working on creating a biodegradable plastic from shrimp shells and silk proteins for use in implantable medical devices. "Don handed me a speck of stunning amber-colored material and said, 'This is shrilk!' I was flooded with thoughts of tent structures designed to disintegrate by the first rain, returned to sea post-use." Oxman's team got to work, ordering shrimp shells from a local seafood supplier and grinding the skeletons into paste. With a custom-made 3-D robotic printer, they created a winglike multifunctional structure out of a single substance, chitosan, which is sourced from the ocean and returns to the ocean: "a true material ecology."



Oxman tells me her process starts with science, using observation and testing to understand what natural processes are made of and how they react to their environment. These processes are building blocks that inspire an engineering phase to explore how to make new materials, which then leads to design and the broader cultural context of how these materials might be used.

Thinking about materials as a dynamic system—alive with their properties and at the same time responding to our needs—is the future Oxman and her lab imagine. If architects can evolve our way of selecting materials to a place of naturally aware design, perhaps we can arrive at more insightful solutions for our buildings. ■

CAROLE C. WEDGE FAIA is the president of Shepley Bulfinch.

ABOVE

Neri Oxman: Chitosan is "a true material ecology." Photo: Noah Kalina, 2017; courtesy Neri Oxman

Background: *Fibonacci's Mashrabiya*, 2009, CNC-milled acrylic, urethane rubber, and polyurethane casting resin composites, Museum of Science, Boston; in collaboration with W. Craig Carter. Photo: Courtesy Neri Oxman

WOOD: RON ANTHONY

GRAIN ELEVATION

by Charles Klee AIA

As a fourth grader, Ron Anthony was asked a familiar question: “What would you like to be when you grow up?” Even at that young age, his answer was characteristically broad and thoughtful. He wanted to be a forest ranger, scientist, or detective. Years later, he found a way to be all three.

After earning a graduate degree in wood science, Anthony pursued a career assessing the performance of wood structures, understanding why wood fails, and ultimately advising architects. His education at Colorado State University was instrumental in setting this course. The program allowed him to study not only forestry but also wood science and technology. “I studied in a program where structural engineers and wood scientists took classes together,” he says. Where many wood scientists looked at careers in quality control within the lumber industry, Anthony wanted to interact with designers and engineers, focusing on the end use of wood products.

When design began on the Harvard Art Museums with Renzo Piano Building Workshop, it was clear that maintaining the context of the historic Fogg Art Museum and Le Corbusier’s adjacent Carpenter Center would be challenging. Selecting wood as a façade material was intended to be sympathetic to the concrete and brick

buildings and the residential neighborhood across the street, but the choice raised several technical questions, and our team needed advice.

Recommended by our structural engineer, Robert Silman Associates, Anthony joined the team. He had recognized technical prowess, the intuitive mastery that comes from years of experience, and true passion. Early in his career, he worked with Jozsef Bodig and Frederick Wangaard, among the most respected names in wood science. “They helped me understand performance characteristics, such as shrinkage behavior, far beyond simple numbers in a reference table,” he says.

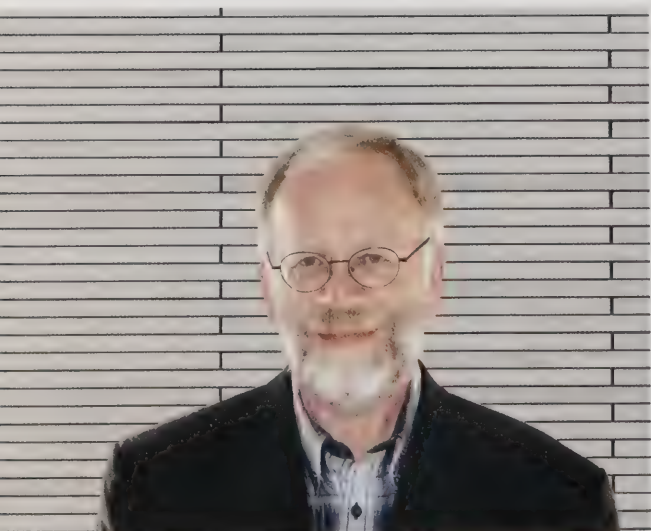
For the museum project, we needed a species of wood that offers long service life and minimal maintenance. Piano’s team was initially drawn to Siberian larch, but Anthony knew it was less readily available at that time and other species might be more reliably sourced. “Alaska yellow cedar seemed like just the right option,” he says, “because it had the decay resistance and low shrinkage of red cedar with some of the more desirable physical traits of a hardwood.” It was also available as Forest Stewardship Council–certified lumber. So Alaska yellow cedar it was.

Having selected the species, he flipped to the engineering side of his persona and studied how to configure a wood façade for an institutional building in the Northeast. Consistent with good façade design in this climate, he recommended we design the wood façade as a rain screen, but pushed it further. Recognizing the impact of humid summers and severe winter nor’easters, Anthony suggested we use larger timbers with gaps around each piece to provide four-sided ventilation.

He also developed a technical specification for the wood, identifying the optimal moisture levels, a tight vertical grain, and the maximum size and frequency of knots. These requirements were set with a very precise goal in mind. “We knew the key to this façade’s longevity was having wood that behaved naturally within well-defined limits,” he said.

In the five years since the wood was installed, the weathering stain we applied to simulate its aged appearance is wearing off as expected and is being replaced with a natural patina. It’s beautiful, but more important, the system is performing as expected, with very few warped, checked, or split members. To date, no replacement has been required. ■

CHARLES KLEE AIA is principal at Payette, which collaborated with Renzo Piano Building Workshop in designing the Harvard Art Museums.



LEFT

Ron Anthony: Alaskan yellow cedar was “the key to [the Fogg] façade’s longevity. Photo: Courtesy Ron Anthony

Background: Fogg Museum, Harvard Art Museums. Photo: Clif Stoltze; courtesy Stoltze Design

GLASS: JAMES CARPENTER BEACON OF LIGHT

by Gary Hilderbrand FASLA

If you know about contemporary design and building, you might be thinking that James Carpenter is the architect or sculptor (*which is it?*) who works inventively with glass and sometimes with metal. He's our glass guy, right? Well, not exactly. He's really our *light* guy. He practices a kind of fusion with stuff we can barely describe, let alone hold in our hands. I've come to see him as an observer, artist, architect, mechanic, environmentalist, phenomenologist, and dreamer.

What I've learned from working with Carpenter is that his medium is even more ephemeral than mine. In the landscape, we work with tangible matter: water and earth and plants that are always moving and alive; along with space, which is immaterial and indeterminate. Carpenter's world is yet more abstract and fugitive because he works with matter in service of *energy*: light, heat, gravity. Everything he makes is meant to reverberate and refract the sensory information of the life that surrounds us.

If you're lucky enough to get close, you can barely turn away. A few years ago, Carpenter showed me a digital re-creation of *Migration*, his 1975 film installation. The piece begins with six projected rectangles that depict salmon moving swiftly through shallow rushing water. Simple enough—though, in fact, the film's timing is slightly altered with a kind of time-lapse effect by repeating each frame three times. In about 30 seconds, another set of projections appears, showing clouds reflecting off the glimmering surface of the stream, superimposed over running fish. A third set follows, recording shimmers on the stream's gravelly bottom. It's an exploded dissection of an activated space in time.

Perhaps you have experienced these transitory qualities in one of his many works, but all this is amplified in a visit to James Carpenter Design Associates' studio in Manhattan. It's a Candyland full of materials you've never even seen—pickled stainless steel, abraded and corrugated sheets of perforated bronze, toggling hardware and customized fasteners, glass with embedded metal reflectors or prisms, and, of course, full-size mock-ups and experiments in progress. You're



in a wizard shop of applied materials science. Every project invents something the world hasn't seen before.

I've watched his calm demeanor and persuasive voice bring forward deeper curiosity among clients and collaborators—myself included. He routinely conceives and executes the work with other designers, engineers, scientists, researchers, testing labs, fabricators, and specialty contractors who transport and build with precision and care. The humanist in him draws out in others a greater desire to make people aware of where they are and what it can be like. About working with the medium of light to do this, he says: "So many things in this world today are accelerating beyond the speed of our physical body. Physiology is being superseded by technology. So we need to find ways of slowing things down and allowing people to see things. To see light, see movement, see themselves, really see the world around them."

I enjoyed this way of working with Carpenter on the Massachusetts Fallen Heroes Memorial, in South Boston's Seaport Commons. The 50-foot-tall beacon, perfectly executed in bronzed stainless steel and animated with refracted light and wondrous nighttime luminosity, literally reflects the atmosphere and weather of the Seaport. And it asks us to consider the solemn sacrifice of the Commonwealth's Gold Star families, who have lost loved ones in Iraq and Afghanistan. The tower, like the artist, defies the usual categories; it's a refined alchemy of materiality, atmosphere, memory, and awareness of one's place in the world. ■


GARY HILDERBRAND FASLA, the 2017 recipient of the ASLA design medal, is principal of Reed Hilderbrand and professor in practice at the Harvard Graduate School of Design.

ABOVE

James Carpenter: "We need to [slow] things down and [allow] people to see things." Photo: © Brian Gulick; courtesy James Carpenter Design Associates

Background: Millennium Tower, New York City. Photo: © 2009 Francis Dzikowski/OTTO





CRAFT BREW

WHEN TECH MEETS TOUCH, THE MIXTURE CAN BE INTOXICATING

by Stuart Kestenbaum

My first opportunity to see the connection between handcraft and new technology was in the summer of 1999. I remember the moment clearly because, in retrospect, my perception of what was possible was so far off the mark.

I was standing on the deck by the main office of the Haystack Mountain School of Crafts in Deer Isle, Maine, and had just been introduced to Mitchel Resnick, who was visiting the island. Resnick is a professor and head of the Lifelong Kindergarten Group of the Media Lab at MIT. As soon as I heard "MIT," my response was that an intensive craft workshop program and one of the nation's preeminent technology centers didn't have much in common. Although we were still in a pre-smartphone era, it was clear that digital technology had already begun making rapid advances in our culture. For me, Haystack—where we emphasized the process of discovery through working with materials—was an antidote to technological changes that were replacing human touch.

I commented to Resnick that our institutions were pretty far apart in how we looked at the world. He said that he thought we actually had a lot in common. I was skeptical. MIT represented the latest technology, all wired intensity driving technological



ABOVE AND FACING PAGE

Wood and Styrofoam, routed using Haystack's ShopBot, transformed at the workshop with MIT Media Lab students. Photos: Courtesy Haystack Mountain School of Crafts, Deer Isle, Maine

innovation in the heart of Cambridge; Haystack, designed by Edward Larrabee Barnes and built in 1960 on a spectacular sloping site overlooking Jericho Bay, was a place of retreat, where time seemed to slow down as makers experimented with clay, glass, metals, textiles, wood, and other materials. This doesn't mean that Haystack wasn't contemporary. Francis Merriitt, its founding director, was an innovative programmer who brought in craftspeople from Asia, Africa, and Europe and partnered with makers from other fields—including visionary architect Paolo Soleri at Arcosanti. But all our work had been connected with what we perceived as what made us human, and that centered on an intimate relationship between maker and material.

Still, I realized that Haystack should begin to examine this uneasy relationship between the analog and digital worlds and initiated conversations with Resnick and others at MIT about a symposium that would bring the two together.

In 2002, *Digital Dialogues: Technology and the Hand*, convened 60 or so makers, thinkers, designers, and educators for lectures and hands-on activities. Half the group was selected by Haystack, the other half, by MIT. In each of our six studios, we created impromptu labs and selected one craft representative and one new technology representative to develop projects together.

It was a bit overwhelming to see the arrival of the MIT contingent—loaded down with computers. It felt like two mismatched families gathering for a wedding or a visiting sports team from a much bigger school coming to play.

In our blacksmithing shop we paired MacArthur Award-winning blacksmith and sculptor Tom Joyce with Justine Cassell, at the time a professor in the Gesture and Narrative Language Group at the

Media Lab. They decided to make a vessel in forged steel that would “tell” the story of its own making by placing sensors in the finished vessel. This involved recording audio and video during the making of the piece. I visited the studio late one evening. Joyce and others were working at the glowing red coal fires while grad students from MIT were working in the cool blue light of their laptops, creating the computer program needed for the project. It was at that moment that I made a connection to humans as inventors and makers—beginning with the mythic fires of the forge and continuing on to a digital world. What connected our two groups were ingenuity and a relationship with materials—a human story that is ancient and new at the same time.

My programming ideas continued to evolve, and I began inviting makers who used digital technologies, such as Diane Willow and Christopher Csíkszentmihályi, to be visiting artists during the summer sessions. Then, in 2009, I developed a conference at the school to investigate how artists' work was evolving with technology. I called it *Making: Past, Present, and Future* and invited Neil Gershenfeld from the MIT Center for Bits and Atoms to speak. I was fascinated by his pioneering ideas about digital fabrication and a future he envisioned in which things would replicate themselves. In addition to speaking, he wanted to bring a portable fab lab with him—digital equipment such as a computer numeric control (CNC) router, laser cutter, and vinyl cutter—so that our conference participants would have a hands-on look at the next generation of fabrication.

Gershenfeld says that when he got to Haystack with his digital equipment, it reminded him of Bob Dylan going electric at the Newport Folk Festival. He sensed an outrage among some of our conference participants, who believed that this

kind of equipment didn't belong in the world of craft. But by then, it seemed to me a natural evolution of understanding the best way to use the tools at our disposal.

I invited Gershenfeld back in 2010 to be a visiting scientist for two weeks, and we continued to explore digital fabrication. The following year Haystack built a fab lab of its own, becoming one of hundreds of fab labs in the Center for Bits and Atoms network.

What distinguished the Haystack lab was a program rooted in craft and materials. It may be true that you can make almost anything digitally; what craft brings is a deep regard for the material. It's not just enough to make something—each material has its own properties and history and aesthetics, and the craft maker understands and honors this. Since craft understands this continuum of technology and creativity—think of how firing clay evolved from open pits to brick kilns—it also understands that there are many ways to make things. If technology pushes us sometimes to assume faster and newer is better, craft asks us to think about how we're going about making something. Sometimes that answer is a laser cutter; other times, it's a pair of scissors.

As part of our orientation at the beginning of each workshop session, I would talk to students and faculty about how they could use the equipment, emphasizing the experimental nature of our program. The lab was staffed by "gurus"—often MIT doctoral students—so the conversations that we began with our *Digital Dialogues* symposium continued. For some people, the idea of using a 3-D printer to create work was astounding; they had

been introduced to a brave new world beyond comprehension. For others, it presented exciting possibilities for expanding their vocabulary as makers. And for a mostly younger generation of makers accustomed to creating vector files and using programs such as Adobe Illustrator, it was simply another tool.

Increasingly, makers see digital tools as just another way of working. The challenge is how we use these tools. Just as potter's wheels and table saws are only as good as the minds and hands that put them to use, a laser cutter or CNC is neutral, too. The challenge of all art and design—to get beneath the surface, to give a new voice to the age-old dialog between maker and material—is with us no matter what the technology. Faster and newer aren't necessarily better. Craft—the slower work of the hand—may not be part of our day-to-day world now, but it exists for us as a metaphor. It says that a maker who understands materials, who employs skill, knowledge, and ingenuity, can build a human world with balance and harmony.

It also says that touch—meaning the hand and the knowledge embodied in it—is an essential part of being human. One of the enduring images from our *Digital Dialogues* conference was watching the MIT doctoral students late at night in our ceramics studio, enthusiastically attempting to center lumps of clay on kick wheels, the first step in forming a vessel. The clay is centered when your hands can rest on it without moving—a moment when human, material, and technology are in balance. May all creative journeys begin in places like that. ■





IMAGE

Vector outlines of
AtFAB furniture parts;
courtesy AtFAB.

ECONOMY OF SCALE

CAN THE MAKER MOVEMENT REVIVE U.S. MANUFACTURING?

by D.C. Denison

The doorbell is the first clue that you are requesting admission to a makerspace.

Squeezed next to a beaten-up metal door on the backside of an old brick warehouse, the button is housed in a laser-cut acrylic panel that glows amber. Press the button, and the signal routes through a hobbyist microprocessor and rings a 1960s-era telephone inside Cambridge Hackspace.

If it's a Tuesday night, when this makerspace hosts its regular Open Project Night, someone will let you in.

Inside, on a recent evening, 20 people were scattered about a large loftlike room that smelled of scorched wood. On one side, a few members were working at a laser cutter (which accounted for the burnt-wood smell); against the opposite wall, a woman with a radically asymmetrical hairstyle was patiently coaxing a 3-D printer to create parts that would be assembled into a drone. The rest of the attendees were gathered around

a variety of work tables drinking beer, tapping on laptops, and tinkering with electronics projects bristling with wires and blinking lights. A vanquished robot warrior sat forlornly on a shelf by the door.

The term *makerspace* (or *hackspace*—basically the same thing) is barely more than 10 years old, yet already more than a half-dozen such places have sprouted up around the

According to the Brookings Institution, maker enterprises are expanding beyond their artisanal and hobbyist roots to create true business value.

Boston area. Half workshop, half social club, makerspaces have evolved in that short time to include a predictable miscellany of tools: 3-D printers, computer numerical control (CNC) routers, and laser cutters; microprocessor platforms and mini computers such as the Arduino and the Raspberry Pi; and a culture of tinkering and hacking.

In 2016, the magazine *Popular Science* reported that there were nearly 1,400 active makerspaces widely distributed around the world. These facilities are not only cropping up in old industrial spaces but also in schools, libraries, and

creative offices like architectural and design firms. Another “maker movement” barometer: In 2016, more than 1.4 million people attended 191 carnival-like show-and-tell Maker Faires in 38 countries around the world.

But as all this activity continues to flourish, many observers are asking an obvious, sometimes hopeful, question: Could this “maker movement” evolve into a serious manufacturing renaissance? Will the best projects hatched in makerspaces ultimately find their way to factories and store shelves? Or will the movement stay niche: a boutique phenomenon that thrives mostly in urban and hipster neighborhoods?

Certainly US manufacturing could use a boost, at a time when so many American companies, like Apple, build most of their best-selling products in China. Creative and design professions would also benefit from easier, less expensive ways to turn ideas into real products that are available in brick-and-mortar and online stores.

Earlier this year the Brookings Institution enthusiastically endorsed the potential of the maker movement, “a deeply American source of decentralized creativity,” to rebuild America’s thinning manufacturing ecosystems. According to Brookings, “makers’ locally-grown enterprises are expanding beyond their artisanal and hobbyist roots to create true business value.” To tap that value, US cities and regions just need to cultivate their local maker communities and connect them with local manufacturing resources. The report concluded, “By



MAKER FAIRES
GLOBALLY
SINCE 2012

400

131,646

CREATIVE PROJECTS
BROUGHT TO LIFE
THROUGH KICKSTARTER

PROJECTED WORTH
OF THE 3-D PRINTING
MARKET BY 2020

\$8B

>300,000

PART- AND FULL-TIME
JOBS CREATED BY
KICKSTARTER PROJECTS

HACKERSPACES
AROUND
THE WORLD

1,975

Sources: extension.org, kickstarter.com

embracing the do-it-yourself ethos of the maker movement, communities across the country can renew a sense of local community and help rebuild American manufacturing from the ground up.”

This approach also resonates with Boston architect Brad Prestbo, a senior associate and Technical Resource Group chair at Sasaki. Prestbo recently collaborated with the Boston Society of Architects/AIA to cofound a new BSA committee, MakeTANK, to bring maker culture into the design process.

In an interview, Prestbo said he believes the architectural world is in the midst of a very special cultural moment that’s been created by a convergence of several factors. The first is an exponential increase in computer-processing power. The second is immediate access to new and evolving fabrication materials and tools. The third is a general paradigm shift toward dabbling, tinkering, greater risk taking, and “the making half of the profession.”

In 2016, the MakeTANK committee began to actively explore how to bring making into the design process. The group’s custom-cast, node-and-spoke demonstration pavilion, on display at the 2016 ABX convention, was later installed at the deCordova Sculpture Park and Museum during the summer of 2017, alongside several of the museum’s permanent pieces. MakeTANK is also planning on creating an installation featuring origami felt laminates at ABX this November.

Asked whether he thought makerspace activity could spark a renaissance in US manufacturing, Prestbo mentioned Opendesk, a London-based group (with a few architects on the founding team) building a global platform that uses the Internet to allow designers to publish digital furniture designs that can be fabricated anywhere in the world by small-scale professional fabricators.

Ultimately, Prestbo believes that as maker tools are able to create hybrid materials, combining different filaments and different materials, even construction sites will become more like microfactories: forming up structures on site.

Anne Filson and Gary Rohrbacher, architects who are professors at the University of Kentucky, have also been exploring the makerspace-manufacturing connection. A few years ago, they cofounded AtFAB, which distributes its furniture digitally via Opendesk’s FabHub network and another network of fabricators called 100kGarages. Anyone is welcome to download the files for free; AtFAB designs have been downloaded more than 12,000 times. If the designs are used commercially, AtFAB requests a percentage based on volume and fabrication cost.

“It’s very easy now for a young designer to have a global network,” said Filson. “We think that more and more young designers can have their own websites, host their own designs.”

In the AtFAB vision, makerspaces serve two purposes: Designers and craftspeople can use makerspace facilities to create prototypes; then, once they are happy with a design, they can post the digital file so that interested customers around the world can get it fabricated at the nearest makerspace.

“Right now the biggest role for makerspaces is drawing people into the maker movement,” said Filson. “Yet as more people in society recognize their agency as makers, makerspaces are going to have more functions, more than just an introductory one. They can become manufacturing hubs.”

Adds Rohrbacher, “Today, I think of makerspaces as incubators. But if a makerspace saw their constellation of tools as relating to

LEFT

Finish studies for the AtFAB 5-30 Minute Chair; courtesy AtFAB.



the underemployed or semiskilled workforce in their area, that would be amazing. They could become distributed manufacturing sites.”

For Prestbo and AtFAB, the manufacturing impact of makerspaces is real but relatively small: measured in hundreds of units, distributed among small, local fabricators all over the world. But does the creative output of makerspaces scale up to thousands and millions of units in US factories that create jobs and bolster local economies?

Scott N. Miller, cofounder and CEO of Dragon Innovation, a manufacturing solutions company based in Cambridge, is a go-to fixer when hardware start-ups, surprised by super enthusiastic Kickstarter campaigns, find themselves dealing with the mixed blessing of having to deliver millions of units. Miller earned his large-scale manufacturing stripes in the late 1990s and early 2000s, when he led iRobot’s Roomba technical team that scaled the robotic floor cleaner from a prototype to high-volume production of three million units. Since cofounding Dragon Innovation in 2009, Miller’s team has worked with more than 300 companies, including MakerBot, Pebble, Ring, and Formlabs.

Asked if makerspace products will make an impact on US manufacturing, Miller downshifts the target from millions of manufactured units to thousands.

One reason, according to Miller: the “Start-up Hardware Valley of Death.” If a maker aspires to sell just a hundred units, he or she can assemble them on a dining room table and sell via Etsy. If there’s potential to sell 10 million, a Chinese manufacturer is the clear choice. But if the anticipated run is 1,000 to 10,000, it’s too big for the dining room table and too small for a Chinese manufacturer. The maker is caught in the Hardware Valley of Death.

The obvious solution for a US-based maker, Miller said, is a small, local manufacturer who will work with the maker, designer, or architect and produce runs of 1,000 units.

“The maker movement has democratized the creation of many devices and is driving production volumes that start in the 1,000- to 5,000-unit range,” Miller said. “These volumes are inherently well suited for domestic production and will provide new opportunities for local manufacturers and workers.” Miller said he’s “just starting” to see this small-scale manufacturing movement emerge in the US.

Others have noticed, too. As makerspace tools have continued to evolve, many start-ups have launched into the space between makers and manufacturers. All are familiar with the kinds of tools and files that power makerspaces. In addition to Opendesk, and 100kGarages, entrants include Maker's Row, 3D Hubs, Sculpteo, Shapeways, Stratasys, i.materialise, Proto Labs, Fictiv, and Voodoo Manufacturing. Even crafty Etsy has launched a beta Etsy Manufacturing center, to match its creators to manufacturing resources.

The US manufacturing scene is also evolving, said Tanya Menendez, cofounder of Brooklyn-based Maker's Row. New "boutique" factories are cropping up, started by people "who are more like makers." Some of New York's venerable family-owned garment manufacturers, now managed by younger generations, are also actively seeking out maker business, she said.

"Many traditional factories that used to only deal with the trade are now reaching out to makers," said Menendez. "For example, some Garment District factories now have Instagram accounts and Facebook pages to show off their work. That's new."

AtFAB's Filson has also noted this trend coming from both makers and manufacturers, which she finds promising.

"When we started out, factories and fabricators were almost hidden," she said. "Now, partly because of the Internet and fabricator networks like Opendesk's FabHub and 100kGarages,

Can the creative output of makerspaces scale up to millions of units in busy US factories that create jobs and bolster local economies?

they are more accessible. At the same time, people working in makerspaces—architects, designers, and just plain makers—are getting better at creating designs and prototypes that can be manufactured."

So makerspaces and factories are moving toward each other? "Ideally, we're going to meet somewhere in the middle," she replied with a laugh. "And that will be an exciting time." ■



OPPOSITE

World Maker Faire mural at New York Hall of Science in Queens, October 2016. Photo: Andrew Kelly/REUTERS

LEFT

At The Hive, the deCordova Sculpture Park summer camp, staffers and campers raise the BSA's MakeTANK pavilion. Photo: Courtesy Sasaki





ORGANIC CHEMISTRY

SEARCHING FOR A NATURAL CURE TO THE PLASTIC PLAGUE

by Blaine Brownell AIA

Plastic has an endurance problem. The material lasts—but not in a good way. Long after its useful life as a product is over, plastic lives on in a degraded state, filling landfills and clogging seas. This combination of durability and decay makes it a kind of undead material, a substance that lives on in a deteriorating condition. Despite the problems with old plastic (or perhaps because of them), our demand for new plastic grows: Approximately 300 million tons of polymers are produced annually. Of this quantity, only 30 million tons will be recycled, and about 7 million tons will end up in the ocean.

The root of the problem is plastic's general lack of biocompatibility. Longevity is a problem only insofar as the material exerts a detrimental influence as it ages. Certainly, some plastics are biocompatible in a medical sense—meaning that they do not produce measurably adverse anatomical effects. However, most polymers made from petroleum consist of synthetic chemicals that resist biodegradation or reintegration with nature. When these substances do eventually break down into smaller pieces, they remain incompatible with ecosystem processes. Many plastics also leach toxins that impair the health of living organisms.

Now Australia-based entrepreneur Alf Wheeler has created a compelling alternative to plastic called Zeoform. Unlike petroleum-based polymers, Zeoform is made from two simple, nontoxic ingredients: cellulose and water. The material is completely biodegradable and compostable. According to Zeoform inventor and chief technologist Martin Ernegg, Zeoform is even edible throughout its life cycle—thus exhibiting true biocompatibility. The material is a durable, industrial-grade substance that may be manufactured in various densities, ranging from Styrofoam to ebony, based on the desired application. Zeoform also functions as a carbon dioxide-sequestration vehicle,



“banking” carbon from repurposed feedstock materials that would otherwise release it into the atmosphere.

How is such a compelling material made? Zeoform’s process is designed to accept a wide range of feedstocks. In their Zeo prototype factory in Mullumbimby, south of Brisbane, Wheeler and Ernegg use a variety of wood- and fabric-based materials—such as paper, jute, bamboo, hemp, and agricultural biomass—in both virgin and recycled states, grinding and mixing them with water to create a pulpy substance resembling wet dough. In terms of equipment, Zeo relies primarily on a paper disk refiner for feedstock preparation in combination with custom steam explosion and enzymatic processing methods. “The process transforms the right matrix of fibers into a porridgy pulp which can be poured, pressed, sprayed, sculpted, and molded,” says Wheeler. Once hardened and dried, the material can be used as a functional substitute for many commercial-grade petroleum-based resins including acrylic; polyvinyl chloride, or PVC; and nylon.

The Zeoform process aspires to create materials as nature does, using the most prevalent organic substance on the planet—cellulose—which comprises approximately one-third of all plant matter. Technically speaking, the manufacture aims to optimize the surface area of cellulose fibers in order to develop hydroxyl bonding, a chemical phenomenon in which glucose chains form a strong adhesion with neighboring chains. Both hydroxyl bonding and entanglement bonding—where the cellulose fibers form tight knots—generate significant strength and resilience, as seen at a microscale in the cell walls of plants.

Zeoform may be combined with various natural compounds like dyes, substrates, minerals, and reinforcing fibers to achieve particular results relating to aesthetic and/or mechanical performance. Some samples resemble petroleum-based plastic while others are reminiscent of stone, metal, or wood. High-density variants of Zeoform are intrinsically water and fire resistant, and the company is developing new coatings capable of resisting harsh environmental conditions.



Zeoform may be processed in a variety of ways. “It can be spray-molded, pressed, compression-molded, poured, sculpted and—when dry—worked like wood,” says Wheeler. “It can be sanded, routed, laser cut, engraved, and polished.” It does not thermoform like plastic, however. When in doubt, fabricators should consider Zeoform more like wood than plastic, as it permits the use of standard woodworking tools.

Significantly, the material requires much less energy to make than petroleum-based plastic; even recycled plastics cannot compete.

Listed among the “top materials for 2014” in *Engineering Materials* magazine, Zeoform has been used to create various products including furniture, musical instruments, and surfboards. Wheeler is keen on expanding the material’s reach into building construction, citing Zeoform’s ideal strength-to-weight ratio, durability, safety, and customizability as fundamental attributes for architectural applications. Zeo identifies three types of uses for future building product lines: flat panels, tubes, and molded components. Flat panels are appropriate for interior and exterior uses such as façade cladding, flooring, doors, ceilings, counters, and interior wall facings. Tubes are particularly suitable as the material tends to prefer curvature, according to Ernegg, and include rail, framing, and handle applications. Molding, in this case, refers to small items like switch plates and knobs.

One of the most compelling potential applications for Zeoform is additive manufacturing. 3-D printing is rapidly



becoming a pervasive, accessible, and cost-effective method of producing finished products as well as working prototypes. Plastic is the most common 3-D printing material, and although digitally fabricated plastic contributes less waste than conventional manufacturing, it still bears high embodied energy and water characteristics. Given Zeoform's versatility and environmental benefits, it represents an ideal feedstock for additive manufacturing. In the future, "the ideal feedstock for a fabricator would be some renewable, recyclable, pollution-free goop whose material qualities—tensile strength, color, insulation, resistance to heat—are all specifiable on command," argues author Bruce Sterling in *Shaping Things*, a far-reaching speculation on the future of products. "Materials like that don't yet exist."

Ah, but now they do.

Another future application could be the multilayered envelope. In nearly every case, the contemporary building façade consists of multiple materials and assemblies, each of which is installed by a different trade. It is commonly known that a building envelope performs only as well as its weakest material, and a single connection failure can lead to catastrophic problems.

However, an envelope assembly could be fabricated entirely out of Zeoform—a multifunctional sandwich with an insulation-grade material in the middle, dense and environmentally resistant material on the outside, and various channels and piping provided as needed for integral building services. (Even windows could be produced this way, as Zeoform can be translucent when formed very thin.) Interlocking composite panels with such a configuration could be produced via 3-D printing using a single feedstock with tunable additive materials and printing densities. The result would be a prefabricated façade system that could be quickly constructed onsite and would exhibit strength, water resistance, fire safety, and longevity—all out of a single material. ("Zeoform can be applied externally, as can timber—both require protection from the elements by way of roof eaves and/or water- and ultraviolet-resilient coatings," claims Wheeler.)

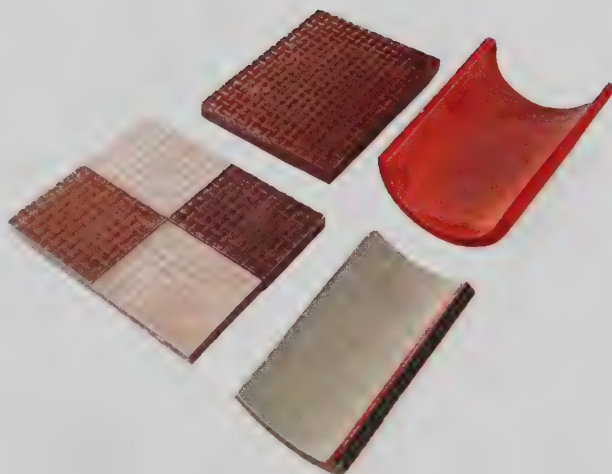
Will Zeoform become the preferred building material of the 21st century? Despite its seemingly improbable combination of positive attributes, Zeo has only begun to license its methods and scale its manufacturing process to meet the demands

PREVIOUS SPREAD

Magic Circle Variation 5 (detail), by Rogan Brown, 2015. Hand-cut paper "embodies paradoxical qualities in nature: fragility and durability"; 39 × 40 × 8 inches. Photo: Courtesy Rogan Brown

PRODUCT SHOTS

Zeoform's process converts cellulose into moulding material that is biodegradable; products include (left to right) industrial samples, a chair, boomerang bowls, and tiles. Photos: Courtesy Zeoform

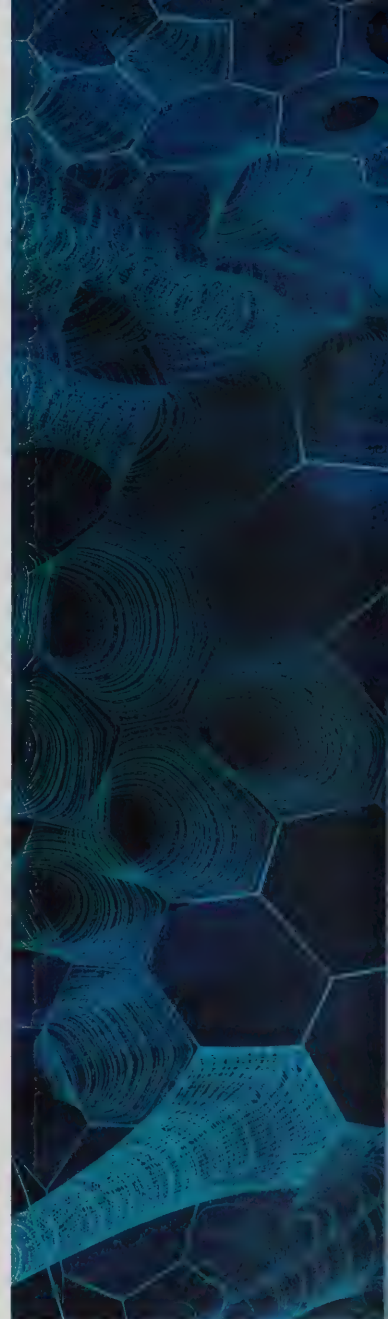


of commercial markets. The economic viability of Zeo's business plan is still to be determined; however, the material has extraordinary potential—not to mention possibilities for revitalizing struggling industries. "There is opportunity to create jobs and reinvigorate towns once dependent on papermaking," says Wheeler. "There are also possibilities to explore utilizing 'blue economy' principles in which all parts of a crop—for example, industrial hemp—are utilized, and the waste streams cascade into systems for new value-added raw materials, ensuring nothing is wasted."

Perhaps decades from now, petroleum-based plastic will be in decline—replaced by a significantly more environmentally responsible, versatile substitute made entirely from cellulose and water. Zeoform products, furnishings, and even building façades may become commonplace, substantially reducing society's environmental footprint. Inevitably, as the new material is discarded and winds up in unanticipated contexts (such as the ocean), it will disintegrate into its original, natural components—nutrients for future ecological processes. ■

KNITTING PATTERNS

When Jenny Sabin was 9, her parents—both artists—allowed her “to design and build a new hutch for our rabbit. That was pretty cool,” she recalls. “I liked to make and build things around our house.” These days, the assistant professor of architecture at Cornell University has taken that childhood focus to a mesmerizing level. Drawing inspiration from sculpture and computation, she knits emerging technologies with material science to conjure playful spaces. As principal of Jenny Sabin Studio, an experimental architectural design studio based in Ithaca, New York, she explores how code, geometry, and the environment intersect with human behavior and can lead to the design of immersive structures. What inspires her today? “Advancing new fabrication techniques and materials with my collaborators in science and engineering—with the aim of generating resilient and adaptive architecture and form.” And perhaps a newfangled hutch responsive to bunny hops? —Fiona Luis



FAR LEFT

A museumgoer at MoMA PS1 in Long Island City, New York, interacts with *Lumen*, which is responsive to human touch. Photo: Courtesy Jesse Winter

LEFT

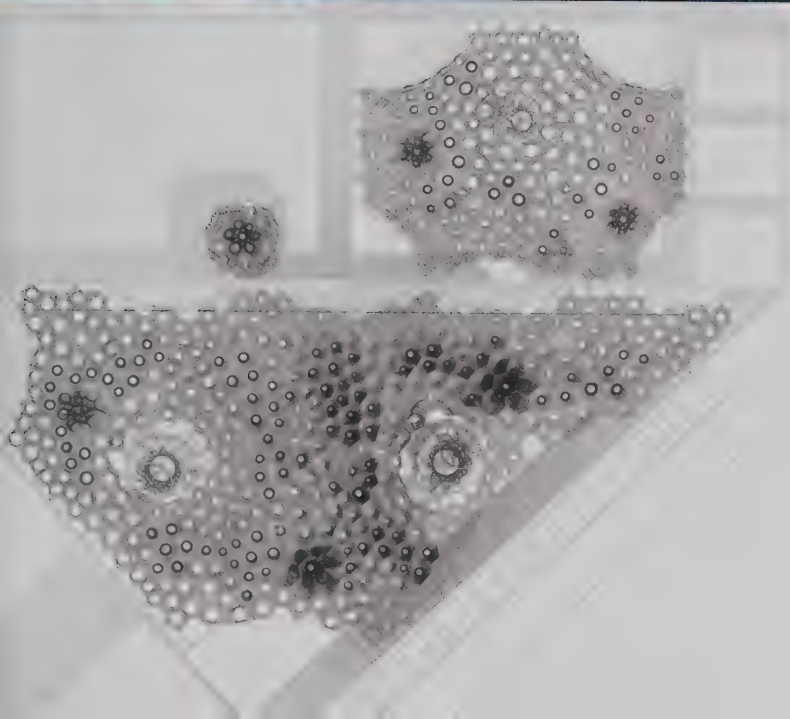
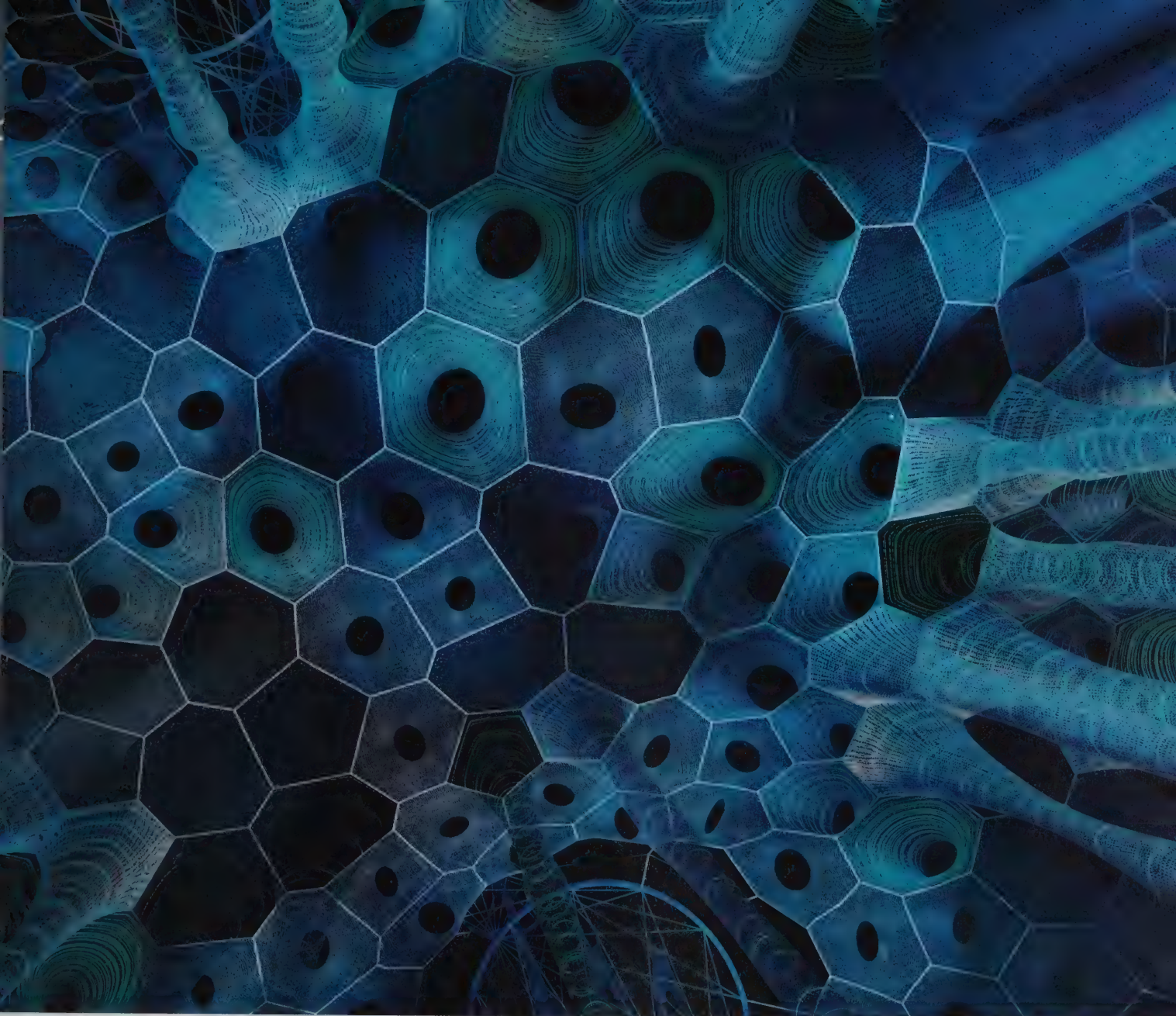
Lumen on MoMA PS1's roof during the day, summer 2017. Photo: Pablo Enriquez; courtesy Jenny Sabin Studio and MoMA

ABOVE

A nighttime view upward into the canopy showing activated photo-luminescent yarns. Photo: Pablo Enriquez; courtesy Jenny Sabin Studio and MoMA

RIGHT

The *Lumen* plan from above, as tensioned between the walls at the MoMA PS1 courtyard. Courtesy Jenny Sabin Studio



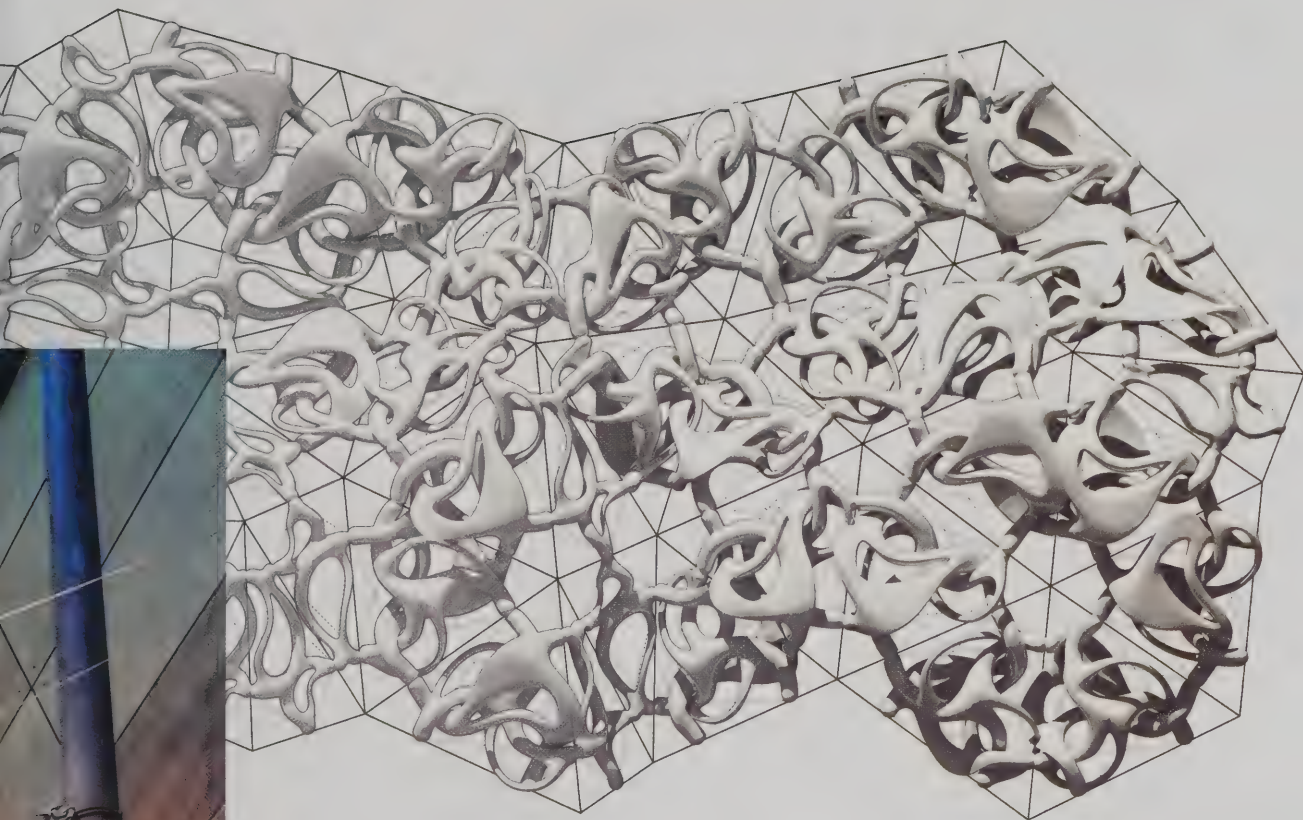
LUMEN (2017)

The 2017 winner of The Museum of Modern Art and MoMA PS1's Young Architects Program, *Lumen* operates as an environment, not as an object. "To my surprise, people loved dancing inside the stalactite cones! For me, the project really came to life when people started inhabiting it, playing in... the soft, complex, fibrous, and responsive architecture," says Sabin. "Maybe *Lumen* simply feels familiar, even though it is so different from our Cartesian built environment. There are no boundaries, straight edges, or lines; it is open, a kind of social spatial fabric."

POLYMORPH (2013)

"PolyMorph is like a cloud, but it weighs more than 2,000 pounds! It combines the fragility of ceramics with the robust nature of shell and spatial structures through continuous tension and compression," says Sabin. The project is composed of three different ceramic parts, cast in multiples of thousands to produce a coherent whole. "It took a very long time to install, but I think people found its complexity and tension—it's both fragile and strong—appealing."





FAR LEFT

Installed underneath the entrance oculus to the FRAC Centre in Orléans, France, *PolyMorph* is composed of 1,400 digitally produced and hand-cast ceramic components.

TOP

Drawing of a portion of *PolyMorph*'s final material assembly.

LEFT

Slip-casting process using 3-D-printed inverse molds.

ABOVE RIGHT

Rendering of an interlocking prototype.

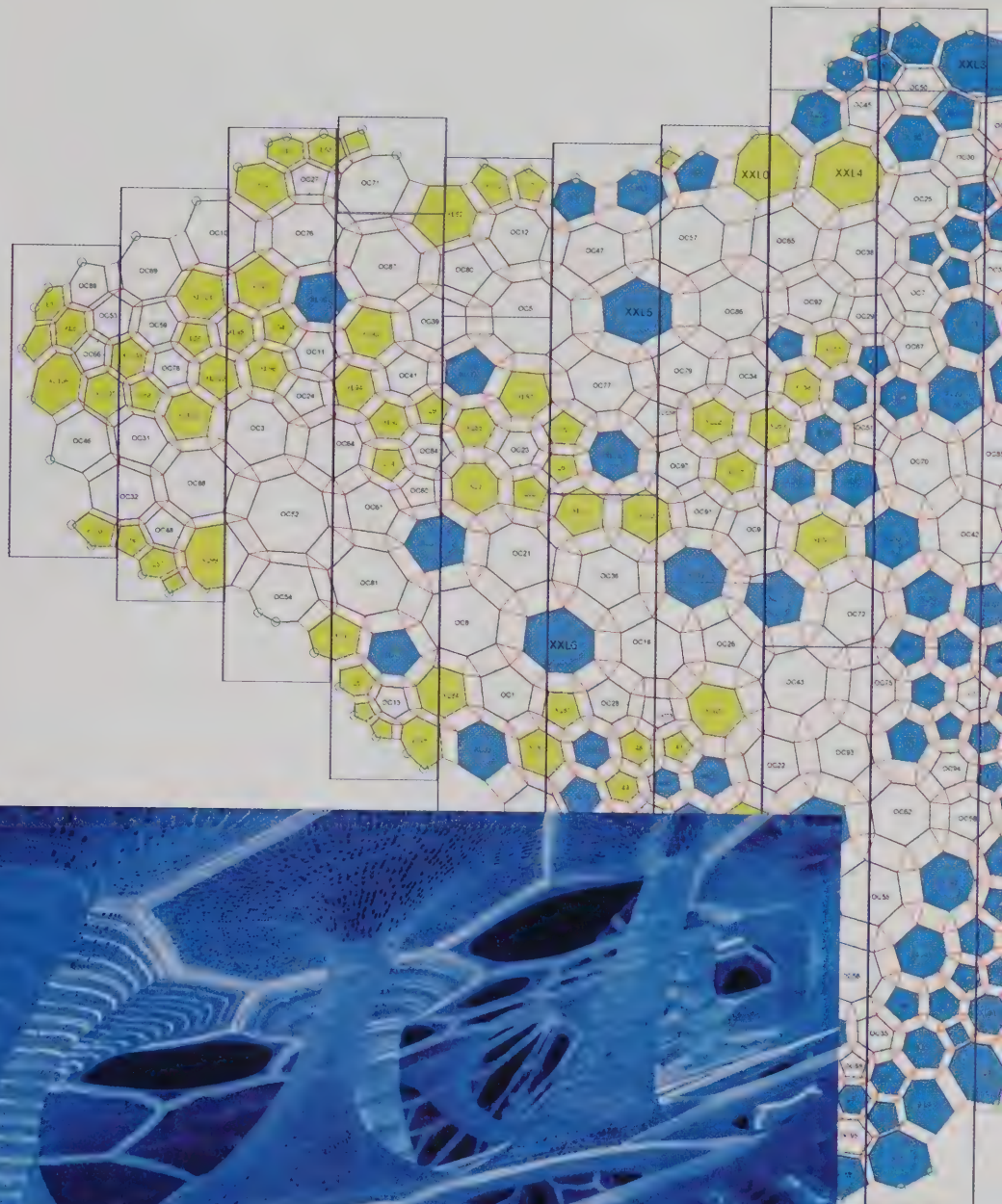
All images courtesy Jenny Sabin Studio



POLYTHREAD (2016)

This project is about reciprocity—between structure and form, surface and edge, cell and environment. “If you look closely at the knitted interior, you will see that there are two surfaces, joined with conical knitted forms,” says Sabin. “The generative design process follows a mode of thinking analogous to the morphology of cell networks and surfaces. It’s also the result of four years of rigorous investigation into the design and fabrication of a new responsive material system.”





ABOVE LEFT
PolyThread installed at the Cooper Hewitt, Smithsonian Design Museum for *Beauty—Cooper Hewitt Design Triennial*, 2016.

FAR LEFT
Generative diagram and tension studies of multiple forms in plan.

NEAR LEFT
A white 3-D-printed scaled model of PolyThread.

TOP RIGHT
PolyThread's knitting and assembly plan.

ABOVE
Interior shot of PolyThread's double surface with activated photo-luminescent threads.

All images courtesy
Jenny Sabin Studio

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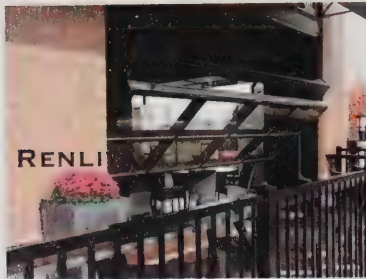


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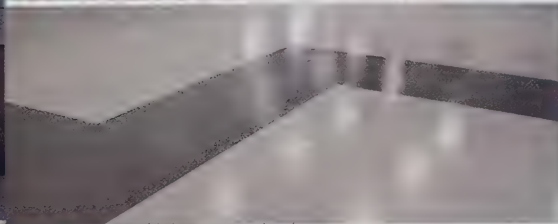


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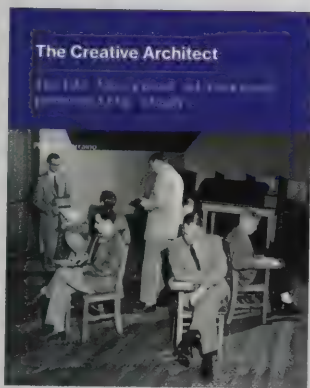


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BOOKS



The Creative Architect: Inside the great midcentury personality study

Pierluigi Serraino

The Monacelli Press, 2016

Reviewed by James McCown

The late 1950s were a heady time for architects. The economy was booming, and city and suburb alike were building relentlessly. If you were a white male, few professions offered more opportunity and personal satisfaction—there were no retrograde New Urbanists calling for design nostalgia, pesky architectural review boards were few and far between, novelty in architecture was highly valued, and individual creativity reigned supreme.

What was the source and nature of this creativity? That was the question posed by Donald MacKinnon, director of the Institute for Personality Assessment and Research, based at the University of California, Berkeley. Beginning in 1958, MacKinnon and his cohorts undertook an ambitious project: Invite all the great architects of the day to engage in a three-day study of their personalities and deepest beliefs. An engaging and richly illustrated new book by architect Pierluigi Serraino chronicles this nearly forgotten study and sheds new light on the essences of talent and creativity.

The grandees of postwar architecture were invited to participate. Titans like Frank Lloyd Wright and Mies van der Rohe declined, but some major figures, like Louis Kahn, Eero Saarinen, and Philip Johnson, were intrigued enough to join in. They would spend three days

in Berkeley together, filling out voluminous questionnaires, undertaking graphic exercises, and being interviewed about their childhoods and career trajectories.

The book gets off to a slow start with a boring chapter about the genesis of the study. But once Serraino gets into the description of how the architects were chosen, it becomes a delicious bit of reading and a fascinating snapshot of a moment in time. Particularly fun is the correspondence among architects, scientists, and journalists as to who should be invited and why. These missives are rife with pettiness and snobbery, and the images of the actual letters are peppered throughout the book. So, too, are “word association tests,” a favorite psychiatric practice of the day.

Among my favorite parts are the graphic exercises the subjects undertook. For example, they were given cardboard tiles in different colors and asked to create a collage. Johnson channeled Mondrian with a reductive red, white, and black composition. I.M. Pei created a delicate assemblage of primaries and pastels. Saarinen went for minimalism with an all-white arrangement.

In the personal interview portion, the architects are put on the therapist’s couch and asked about their childhoods and educational histories. What impact did your parents have? Were you a good or poor student in high school and college? Particularly revelatory is Johnson’s session. Openly gay later in his life, the architect said only that he was “preoccupied with sexual matters.” In a homophobic era, this is as far as he was willing to go.

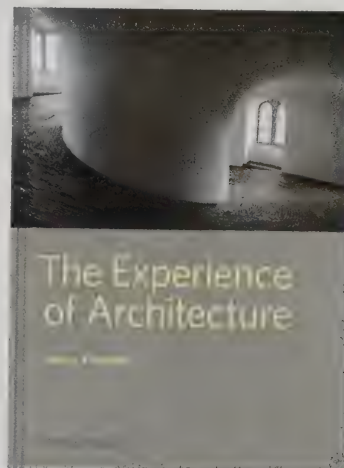
Serraino, a highly competent writer, not only chronicles the study but also offers trenchant observations throughout. He takes an irreverent approach to these famous architects, with insights into their personalities, motivations, and world-views. I would have liked more discussion about religion and spirituality.

“To thine own self be true, for it must follow as the night the day, thou canst not then be false to any man,” wrote Shakespeare in *Hamlet*.

In Serraino’s telling, great architects

are really true to themselves, burning with an inner sense of destiny and the rightness of their cause. But he avoids Ayn Randian clichés about the omnipotent designer, preferring to situate architectural creativity within a midcentury context. He does so convincingly.

JAMES MCCOWN is a writer and marketing consultant who lives in Newton, Massachusetts.



The Experience of Architecture

Henry Plummer

Thames & Hudson, 2016

Reviewed by Diane Georgopoulos FAIA

If you are familiar with the architecture program at MIT from the 1960s, then you may have been previously introduced to much contained in *The Experience of Architecture*. If not, this book provides a wonderful explanation of that school’s design theory. Henry Plummer’s depth of knowledge and unique associations, drawn from painting, poetry, and philosophy, infuse the text with a personal language designed to expand the way we think about conventional architectural features. (He acknowledges the many MIT and other influencers in his career who shaped his teaching, research, and writing.) His approach—“both/and” rather than the “either/or”—asserts that buildings should offer choice and action rather than be the fabricated spectacle of modern buildings that are designed for

passive observation and automatization of systems.

Plummer illustrates his theory with visual exhibits of photographs and drawings that architects never tire of seeing. These include the selected works of Carlos Scarpa, Herman Hertzberger, Frank Lloyd Wright, Japanese temple and landscape design, and the vernacular construction of Mediterranean hill towns and villages.

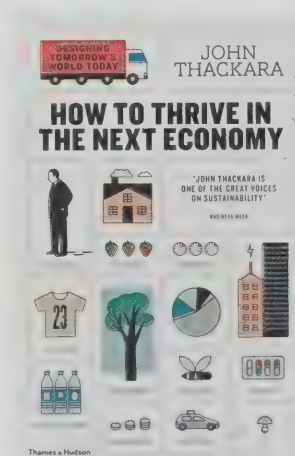
His idea is that “action” requires effort on the part of a person using buildings or systems. In writing about doors and windows, for example, he invents the term “Mechanics of Transformation,” which unfurls for us the idea that doors and windows are systems that can be manipulated to accommodate our own comfort. And lest you think that this is easily or seamlessly practiced, Plummer confounds us with examples where doors don’t open as you expect, causing frustration and perplexity. In another example, “action” is described by the retelling of Plummer’s experience of a terrifying climb up the red oak stair built by sculptor and furniture maker Wharton Esherick. It required the agility of a billy goat to navigate the irregular steps and alternative routes to ascend. His point is that such challenges and choices make us more alive to ourselves. Like Esherick’s stair, the value Plummer places on these experiences tower over an architecture that is designed for the spectator. The overly entertaining and theatrical setting of Modern architecture is meager fare when compared to the authentic struggle of living creatively in oneself.

Wonderful sidebars into poetry and music use analogies to explain unfamiliar ideas, such as “recursive” architecture. Quoting William Blake’s “to see the world in a grain of sand,” Plummer riffs on the term as the “larger form which breaks down to increasingly smaller repetitions of the same basic form, or alternately the larger form is built through the aggregation of smaller forms.” Such concepts provide entree to understanding the additive nature to creating active forms and how one might actually design such an environment.

Plummer’s ideas are deeply felt and thoughtfully explored. He celebrates the joy that is gained through energy expended exploring the built environment and wants us to experience it, too. He proposes optional, ambiguous, and indeterminant spaces as opportunities for personal action, to elaborate and enhance these spaces. He believes that the challenge of overcoming obstacles to have these experiences reactivates a vital source of our own self-reliance, confidence, and humanity.

Reading this book was like visiting a dear friend with whom I had lost contact but remember adoring—even as I remain puzzled by some of the ideas, mysterious formulations of language, and practical inconsistencies. Yet I am gratified and grateful that Plummer has translated some of the more esoteric tenets of this theory into a more accessible format.

DIANE GEORGOPULOS FAIA graduated from MIT’s graduate program in architecture and recently retired after a 30-year career in affordable-housing development at MassHousing.



How to Thrive in the Next Economy

John Thackara

Thames and Hudson, London, 2015

Reviewed by Hubert Murray FAIA

We are fast running out of natural resources. That’s the argument design entrepreneur and journalist John Thackara puts forth by setting the scene with data illustrating the

exponential increase in per-capita energy consumption and the falling rate of return in oil extraction. His premise is that energy, natural resources, and the products of the extractive industries are essential to the world economy and, most critically, to its necessary expansion. More pointedly, he cites the failure of economic indicators to take into account the environmental and social costs of development.

The dire situation thus summarized, Thackara then clarifies that his stance is not of the “doomer porn” variety by illustrating his good faith with global projects that aim to counter the trend toward environmental pauperism. He takes the reader through a menu of case studies in eight spheres of social and economic activity that show promise for a sustainable future. Guided by the notion of stewardship, chapters are devoted to soil, water, building, food, clothing, transportation, healthcare, and “commoning”—the sharing of resources. Each chapter is a rich and inspiring source of well-referenced material, case studies of live projects—community based, some autonomous, some government supported. His purpose is to demonstrate that if these initiatives were taken as models, we could collectively reach the goal of maintaining the human population on this planet in a state of resource replenishment. It is in this exploration that the book’s subtitle, *Designing Tomorrow’s World Today*, finds its meaning.

Examples are abundant. The ecological management of Zimbabwe grasslands has resulted in increased agricultural production and the preservation of wildlife; “bio-regionalism” as a planning concept conjoining urban and rural “social ecological systems” has been adopted in Sweden; and sustainable urban drainage systems (SUDS) are being implemented in Tucson, Arizona, and France’s “eco-quartiers.” Mexico City, Seoul, and London are opening up their

paved-over rivers to perform their original ecological functions. In Andhra Pradesh, India, 20,000 farmers manage a network of microwatersheds to ensure an equitable and sustainable distribution of groundwater. In California, Fresno's Food Commons, the Sustainable Cotton Project, and Fibershed have pioneered holistic systems thinking and social collaboration.

In the section on transportation, Thackara is critical of high-speed train systems as voracious space and energy hogs and social dividers but is full of praise for battery-assisted bikes, especially those used for urban deliveries. Municipally assisted pilot programs are active in numerous European cities as well as China, Rwanda, Tanzania, and India.

When it comes to healthcare, Thackara reports that Menzis, a large Dutch insurance company, has adopted Cuba's strategy of focusing upstream on the 95 percent of cases outside the hospitals; patient-centered home medicine served by care-provider cooperatives have enjoyed economic and clinical success in Canada, Italy, and the Netherlands.

What are the guiding principles? As designers and policymakers, it is essential we think in systemic terms, upstream and downstream. Design is as much about organizing people and institutions from the bottom up as it is about technical innovation. Diverse and distributed economic networks are more resilient than centralized global ones.

Thackara has set ambitious goals, and it may seem that these micro-scale initiatives are not sufficient to their accomplishment. As the US federal government falters in the mission of slowing climate change and reducing resource depletion, states and municipalities are taking up the challenge. This is where the community-based strategies documented in Thackara's book can fill the gaps and accomplish consciousness-raising in the process. As utopian as some of these ideas may seem, we can agree with French philosopher Edgar Morin that "all the great transformations have been unthinkable until they actually come to pass."

HUBERT MURRAY FAIA is an architect and planner in Cambridge, Massachusetts.

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THE DARK SIDE

by Jean Carroon FAIA

Humility is the lesson I repeatedly learn from existing buildings. Having led restorations on more than a dozen National Historic Landmarks, I am confident that the original designers, builders, and owners were not malevolent, nor were the subsequent stewards. Like me, each was working within a framework of available knowledge and best practices, but best practices of the past have given me 30-plus years of experience in “dirty” buildings—the result of miracle materials that turned out to be not so miraculous.

“Dirty” is a shorthand term for hazardous or toxic materials, and every year seems to bring an expansion in the identification of these materials, where they might be found, and how they must be removed or contained. The quest for a healthier, less toxic world is essential but challenging. We have embraced some hazardous materials, like lead and asbestos, for millennia and placed new human-made toxins, like polychlorinated

biphenyls (PCBs) and brominated fire retardants, into widespread use in the past few decades.

Natural materials such as lead and asbestos have been used for thousands of years. Roman drinking water pipes were made from lead, and asbestos cooking pots have been dated to 4500 BC. Asbestos has a tensile strength that surpasses steel, tremendous thermal stability, and is nonflammable. It’s no wonder it was widely used. By the end of the 20th century, an estimated 3,000 products contained asbestos, including roofing, siding, flooring, plaster, insulations for wire, buildings, and piping. Even vermiculite insulation might contain asbestos because of proximity of the source mines. Asbestos fibers are easily inhaled and can lead to permanent lung damage, a disease named, appropriately, asbestosis.

Lead is nearly as pervasive. Lead-based paint and finishes were heavily marketed in the 19th and 20th centuries because they adhered to different surfaces, were fast drying, washable, and durable. One heartbreaking advertisement from the 1920s even celebrated “yummy” flavors of lickable lead-based paint because it tastes sweet. Young children are particularly vulnerable to this toxic metal, which can cause damage to the brain, kidneys, and nerves. Lead was and sometimes still is standard in roofing flashing and often contaminates the soil on sites, which might also contain fly ash—a waste product rich in toxic metals from coal combustion—and arsenic, used as a pesticide.

Harmful “miracle” materials are not exclusive to nature. Even as we ban some, I fear we may be creating others. PCBs were formed by chemists about a century ago and were quickly acclaimed as an industrial breakthrough. They are not flammable, have high electrical resistance and good insulating properties, are stable even when exposed to heat and pressure, and don’t biodegrade. More than 1.5 million tons were produced for use in caulking, floor adhesives, and fluorescent-light ballasts. The very properties that make them desirable also make them hard to dispose of.

Not every miracle product is toxic, but it still might do harm. It was very common in the 1960s and ’70s to chemically clean and “waterproof” masonry buildings with clear sealants. This is a complicated and hotly debated issue within the historic preservation community, but to quote the National Park Service, “Inappropriate cleaning and coating treatments are a major cause of damage to historic masonry buildings.” This has certainly been my experience and made me leery of using any new miracle product.

Hence the humility. What might I be doing that will cause future building and planet stewards to shake their heads in dismay? I can only hope to stay vigilant, informed, and skeptical. Miracle materials are rarely all they claim to be. ■



ABOVE

Shadow Painting 9, by David Maisel, 2017; archival pigment print, 61 × 48 inches. Photo: © David Maisel

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